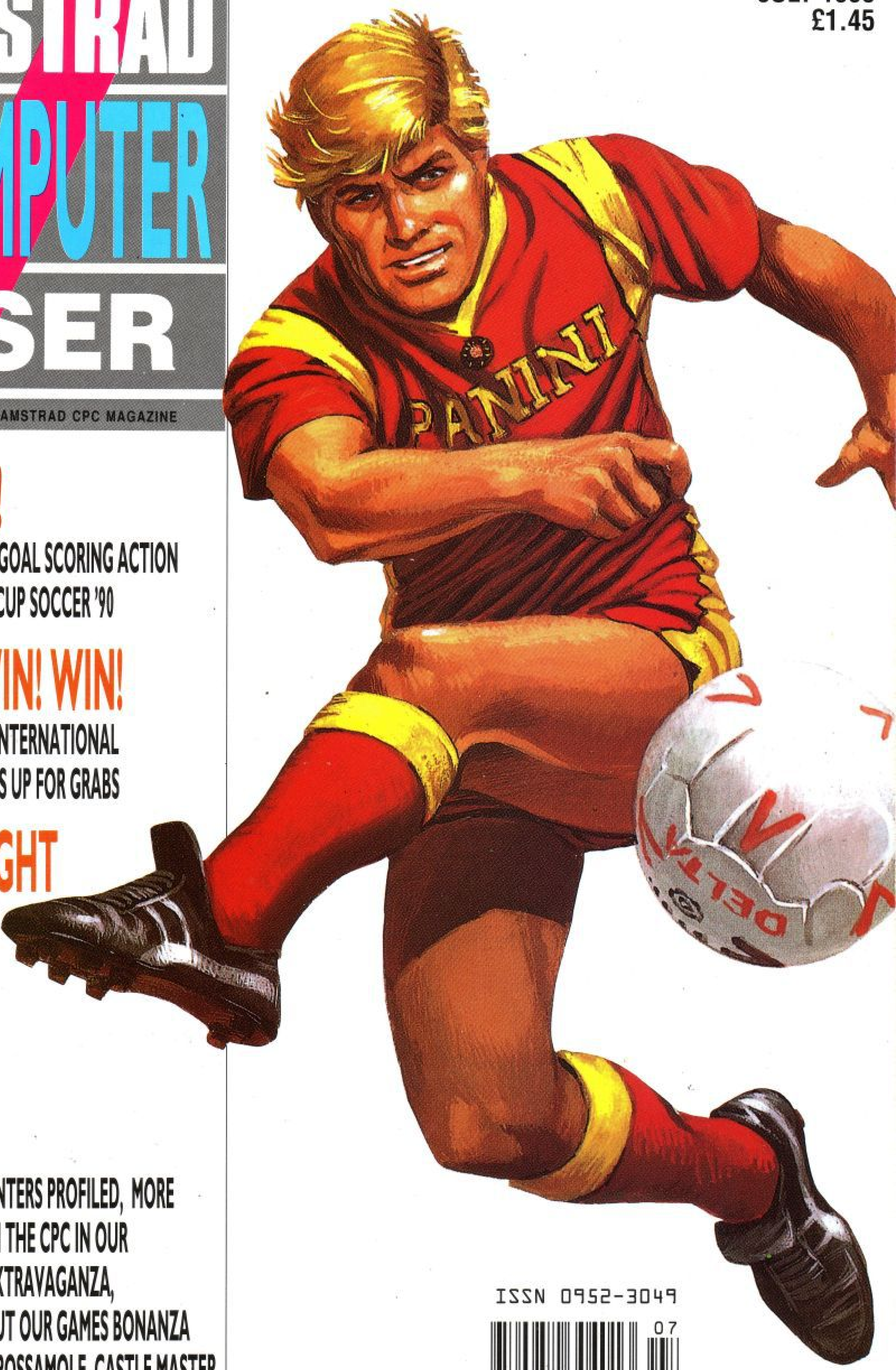
AMSTRAD COMPUTER USER

THE OFFICIAL AMSTRAD CPC MAGAZINE

JULY 1990
£1.45



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C+VG HIT!

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The award winning, chart topping and international best selling soccer simulation of all time!

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"Has to be the best football simulation yet" ST USER

"Most playable soccer simulation in binary history" C & VG 88%

"Boots the other football simulations over the cross-bar" Zzap 96%

"Simply the best football sim" New Computer Express

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Play in a full scale eleven-a-side football game complete with sliding tackles, throw-ins, corners, goal kicks, fouls and even the dreaded referee with his red card.
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"The best ever football managerial game ever, in the history of the World" C & VG 9/10

The ultimate management game" Ace Rated 929

"Easily the best of its type" Zzap 64 89%

"The best ever managerial game" Sinclair User Classic 93%







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Roy of the Rovers

Front cover courtesy of Fleetway Publications

REGULARS



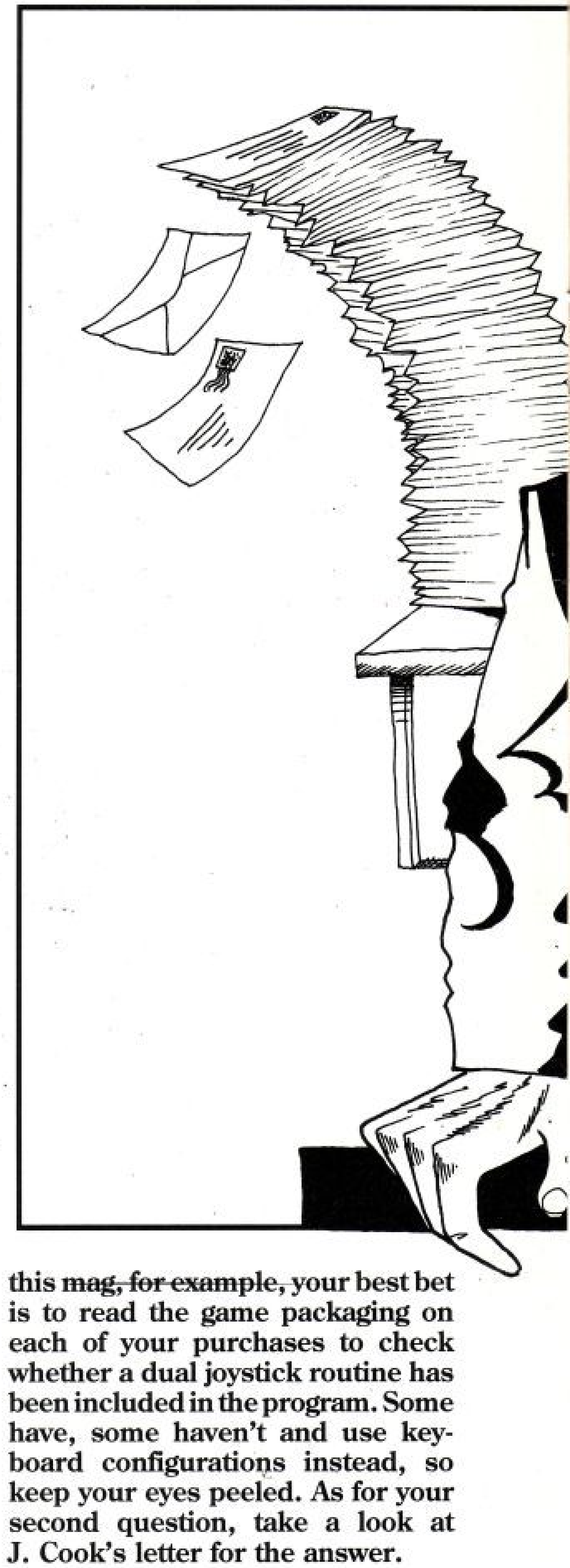


FEATURES



Pipe Mania!!
ADDICTION BEYOND BELIEF!!
C and VG Feb 1990 94%
Pipe Mania is "a classic puzzle arcade game that is so addictive, it should come with a Government Health Warning!
Pipe Mania is a game of great ingenuity, simple in concept and friendishly challenging to play.
You'll need to act instinctively, but think strategically!
One wrong move, one brief hesitation or mis-placed pipe section, and you'll drown in a sea of slime!
ST Action
"Pipe Mania is a conceptually simple and cheeky game which is incredibly addictive"
Commodore User Screenstar
"Terrifically addictive... outlasts any arcade conversion"
AVAILABLE FOR
Commodore Amiga
IBM PC and Compatibles
Atari ST
Commodore 64 Cassette
Commodore 64 Disk
Spectrum Cassette
Spectrum Disk
Amstrad CPC Cassette
Amstrad CPC Disk
MSX
BBC Electron Cassette
BBC Disk
Apple Macintosh
Achimedes
Pipe Mania
Zero March 1990 92%
"Buy this game and you may never sleep again"
The Games Machine Star Player Award 83%
"A puzzle game of great ingenuity and addictivity, Pipe Mania is simple in concept, fiendishly challenging in play, and attractive to look at"
Zzap Sizzler
"Absolutely guaranteed to drive you round the bend"
Amiga Computing Excellence Award 95%
"A game with a game play that shines"
Game Players Award USA
"Best PC strategy game of 1989"
C+VG HIT!
AMIGA FORMAT GOLD
THE One FOR 16-BIT GAMES
ATARI ST AMIGA PC
machine STAR PLAYER
ZERO HERO
SIZZLER
EMPIRE
GAME Players GAME OF THE YEAR
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ZIGGY'S MAILBOX



Firm request

I have two problems that I hope you can solve for me. The first one is that I have been learning machine code for some time now, and I have noticed that I need a FIRMWARE manual for the 6128. Could you please print my address, so that if anybody would like to sell me one at a reasonable price, they could contact me.

The second problem that I have is that when I use my second disc drive, which is a 5.25 inch FD 55F, my 3 inch disc drive motor spins around as well. Is there something wrong with the second drive or the connecting cable, or is it just normal?

Dominic Marsat, 42 Daven Road,
Congleton, Cheshire CW12 3RB

Ziggy: Your wish is my command, master. As for your second problem, I've consulted most of the buffs I know and they reckon its the norm.

Hostage trouble

I have an Amstrad 6128, and have been trying to find a game called Hostages by Infogrames, but can't seem to get the game anywhere. Please can you tell me where I can get it? I've had no luck at all. Also, I want to start making my own games, to use at home, but I don't know how to start off. Can you tell me what I need and how to start?

J.Cook, Eltham, London.

Ziggy: Well for starters, Infograms have reliably informed me that Hostages is, indeed, going to be available on the CPC, but not for a month or two yet. If you want to keep an update on that, try ringing their London office on 01-367 8799. If you want to write your own games, you'll need to brush up on your programming skills. An excellent book for budding game makers is 'Your First Amstrad Program' by Rodney Zaks, available from Sybex Publishers. Try ordering a copy from their base in Crayford, Kent on 0322 57717. Coincidentally, there is a review of the latest sprite making program from Glenco in this month's ACU, which may prove useful. Taking a look at our 10 liners ,may also give you a few hints on basic program writing. Good luck, and make sure you let me see your first release for a review.

Splitting up

I would be grateful if you could let me know if a joystick-splitter can be used on any game which is designed for two players, for example Operation Thunderbolt.

Also, whilst writing, I would like to know if the game Hostages is available for CPC.

Paul Dingle, Norden, Rochdale OL12 7RP

Ziggy: Although joystick-splitters are readily available, as advertised by RSD connections at £6.95 in this ~~mag, for example,~~ your best bet is to read the game packaging on each of your purchases to check whether a dual joystick routine has been included in the program. Some have, some haven't and use keyboard configurations instead, so keep your eyes peeled. As for your second question, take a look at J. Cook's letter for the answer.

Print problems

Please help! I have a 6128 and have replaced my old DPM2000 printer with a Panasonic KX-P1081, but now everything I print comes out double spaced. I haven't been able to solve this problem, even after reading the appropriate manuals and referring to someone who



knows more about these things than me. Can you help?

Julian Clarke, 12 Stuart Street, Aberdare, Mid Glamorgan

Ziggy: Sounds like you've got a dip switch problem to me. Check in your manual as to where these are located on your printer, usually in front of or behind the cartridge, and try playing around with them for the best result if there is no section on line spacing in the manual.

Cheat mode

Please can you put me out of my misery? I am writing to ask if you know the location of where I can purchase an A-Z book on how to cheat on all of my games.

Mark Bollom, Hall Road, Isleworth, Middx

Ziggy: Not sure if there is one, I'm afraid. There are just too many darned games around for a comprehensive guide for them all, but there have been a fair few cassette cheat collections put out. Maybe some of our readers can help. By the way, Chris, the Ed., wouldn't mind a copy either if there is one.

Family affair

I am writing to ask whether there is a software program currently available for plotting and printing a family history in the form of a family tree for us CPC 6128 users.

I saw in a magazine that somebody was using a package that might suit my needs but, alas, they never gave us any details about any packages that might be available.

I have enquired at a number of outlets without any luck, so could you help before I start my project?

Garth Warren, Bath Street, Hillfields, Coventry

Ziggy: Always happy to oblige. There is a genealogy package currently available from David Computer Software in Manchester. Called Genny, the program can be run on a 6128 or a 464 with disc drive, as it needs that additional memory. The package costs £35. Ring DCS on 061 4394841 for all the spec.

Get serious

In support of D.J. Elson, who wrote about serious computing, I must say I wholeheartedly agree with his views. Like him, I consider myself a serious user but not a hacker, neither am I an avid gamester.

The games seem to me to be very repetitive. Like films, there are only about half a dozen basic plots and all the games are just variations of the same themes.

I cannot see me ever mastering the technicalities of programming without personal tuition, which I cannot afford, and the manuals and most mags talk over my head assuming I have more grey cells than I actually have.

It would be nice to have some reviews of serious software, not all games, as our friend D.J. agrees. We appear to be a very large group in the middle as you might say, and it might just be a lucrative market that software people are missing out on.

One more thing, we are always getting the hype about games compilations, some serious software done like that for us old timers would be great.

Ken Carter, Driffield, North Humberside

Ziggy: Certainly, we at ACU are always looking at ways to create a good balance in the mag, and there will be some serious reviews coming up for the not so young-at-heart. I don't believe you are ever too old to start programming, a copy of the book mentioned in reply to J.Cook's letter might help to make a start and get you through some of the technical mumbo-jumbo.

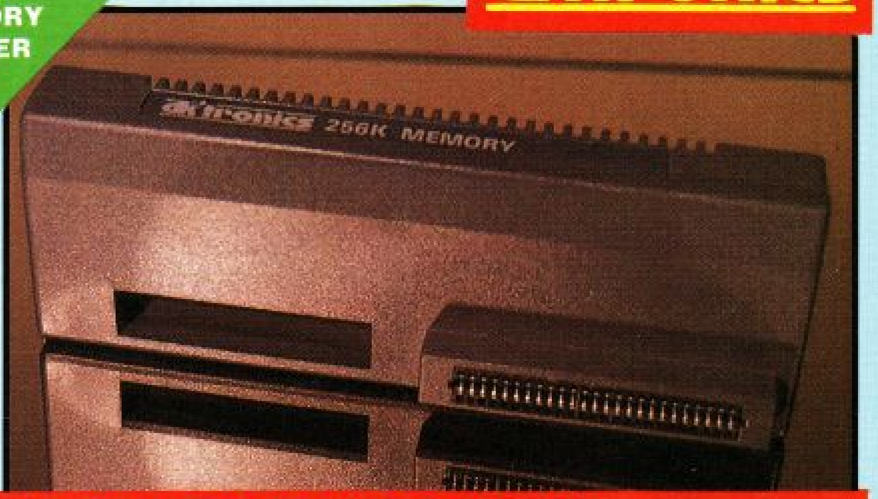
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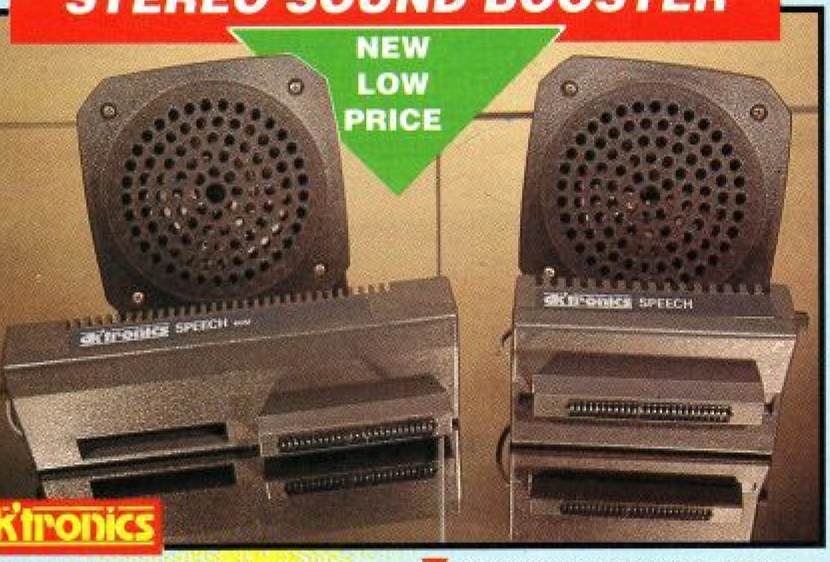
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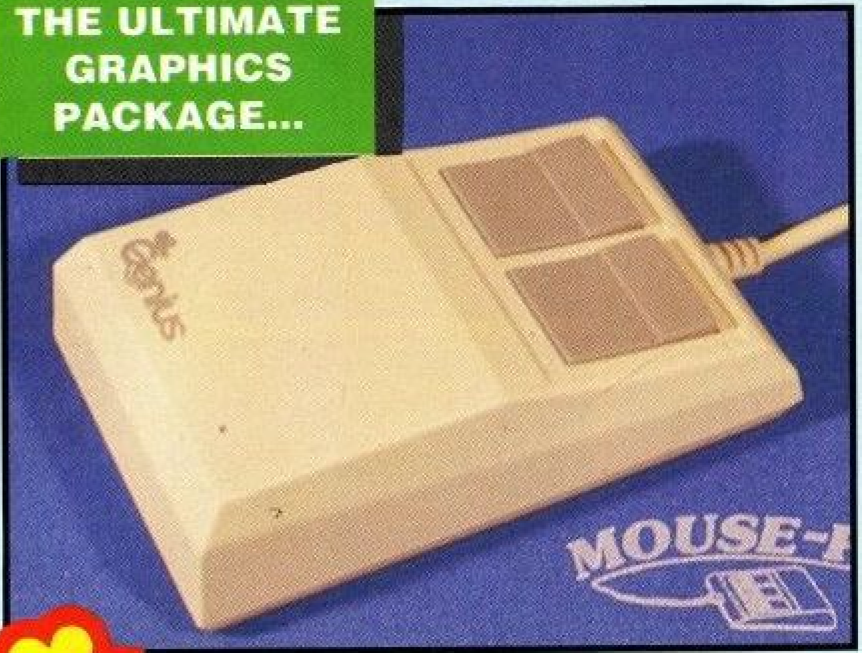
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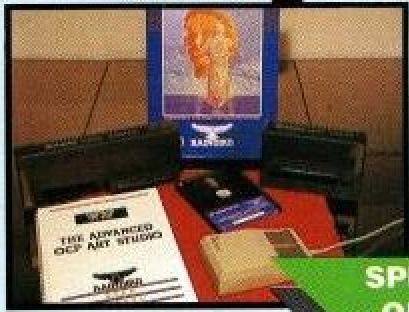
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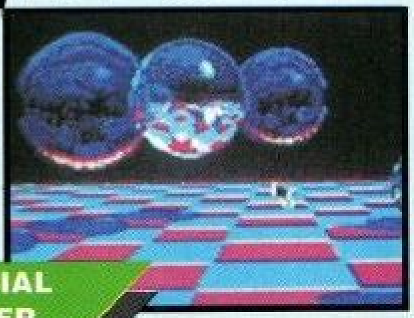
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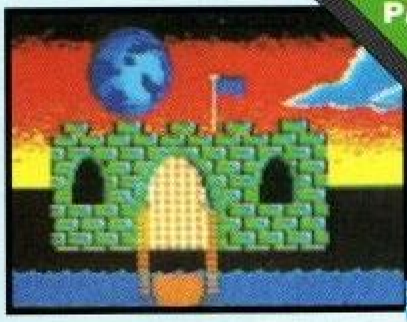
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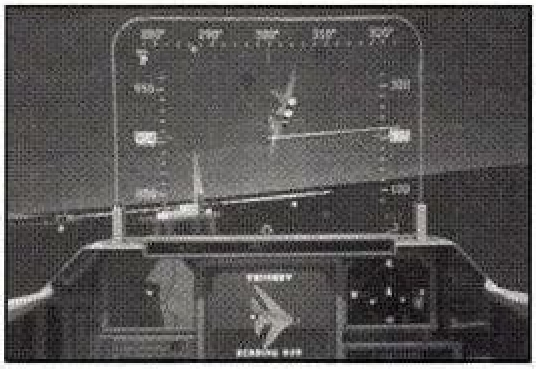
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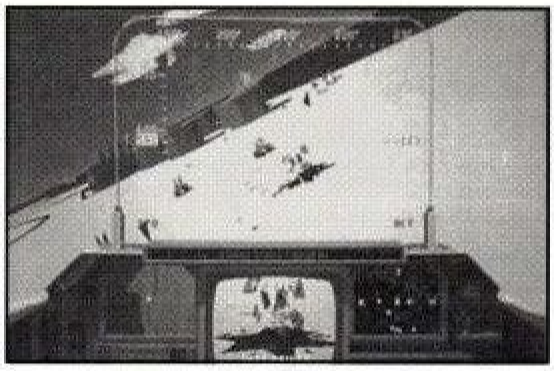
Strike out

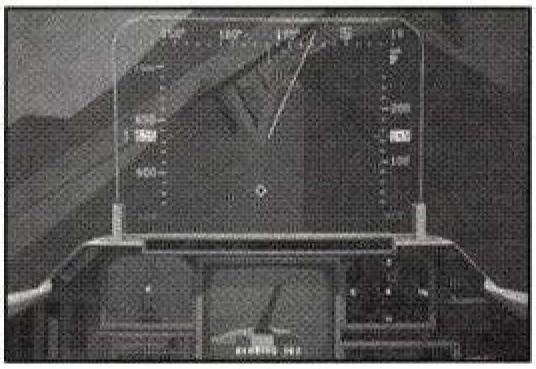
Those fun and games lovers Microprose are set to branch out into the arcade world, with the launch of F-15 Strike Eagle, their first coin-op to date.

Based on the best selling computer game, the player pilots the supersonic fighter wherever he wants, doing turns, loops and rolls against realistic and intelligent enemy actions.

Using 3D graphics and generating up to 60,000 polygons per second for the multi-dimensional effects, F-15 should certainly be worth having a look at, if even for the added attraction of multiple skill levels. Keep a close eye on your local arcade for this one.













Sunken treasures

Aye, aye, me hearties, 'tis prize giving time again. In the April ACU we challenged you with three awfully tricky posers aimed at sorting out the mussels from the whelks and surprisingly enough, there weren't many whelks to be found out there.

The answers to the three sub aquatic questions are:

1. The Nautilus
2. Self Contained Underwater Breathing Apparatus (SCUBA)
3. Acapulco

Digging deep into our waterproof mailbag, we managed to come up with the lucky winner of the super diving watch who is, Kenny Simpkin of Shirley in Southampton.

Fifteen lucky runners-up will also receive copies of either Rock 'n' Roll or spherical, so put on your goggles and see if your name is on the list. N. Jordan of Elstead, Surrey; Mrs J. Gratton of Weymouth, Dorset; Kevin Lacaze of Bristol; J. C. Loader of Farnham, Surrey; Jonathan Peberdy of Boston, Lincs; A. Cunningham of Bishops Stortford, Herts;

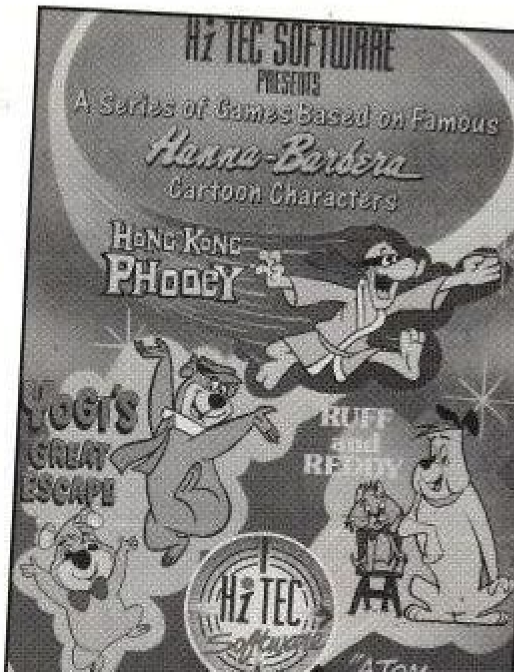
Marc Ulett of Bury, Lancs; R. Swaine of Harrogate, N. Yorks; A. Griffith of Peckham, London; Daniel Humphreys of Godalming, Surrey; J. W. Hussey of Goldington, Beds; Lynsey Learoyd of Bramley, Leeds; S. Patterson of Burniston, Scarborough; P. Riddell of Blackburn, Lancs; and Michael Elkan of Blandford, Dorset. Don't forget, you've got to be in it to win it!

Smarter than your average software

Yogi and Boo-Boo are about to hit the old CPC screens following a licensing agreement between Sheffield based Hi-Tec software and the world famous Hanna-Barbara organisation.

The first of several titles to be published on Hi-Tec's budget label will be 'Yogi's Great Escape' and 'Hong Kong Phooey – No. 1 Super Guy'. Other famous characters set to join the cast are Ruff & Reddy and Atom Ant.

Watch out for reviews of the first two games in next month's ACU, but popping out to the shops to buy one of these titles would certainly make you smarter than the average user at only £2.99 each.



Wonderland

Following extensive development by adventure specialists Magnetic Scrolls, Virgin Mastertronic has signed a licensing agreement to bring the fantasy epic Alice in Wonderland onto our humble screens.

Based on the Lewis Carroll stories, the game will feature over 100 illustrations, many of them animated, with the facility to gain information about objects shown on-screen.

With challenging puzzles thrown in and the prospect of gripping gameplay in Carroll's magical world, it should be well worth the wait for when Wonderland hits the shops towards the end of the year.

Nick Alexander, Virgin Mastertronic's MD, said of the signing: "Over the last 18 months, we have demonstrated our commitment to top quality arcade games. We now feel ready to do the same for adventure games and they don't come any better than those from Magnetic Scrolls."

Diary date

Popping down to the Computer Shopper Show in December could well be worth it, considering the number of goodies that will be on display there. At least 280 exhibitors will be showing off their hard and soft wares at the show in the Wembley Conference Centre in London from the 6-9 December.

If you fancy getting down to the show, buying your tickets early will save you £1 off the normal prices of £5 for adults and £3.50 for children. With these incentives in mind, it's never too early to book it into the old diary. See you there.



Konix rules ole

Konix joysticks look set to give seasoned UK gamesters double the power to the old shooting elbow in 1990, thanks to a sales boost by Spectravideo.

According to Welsh based Konix, sales for 1990 are already nearing the 50,000 mark, half the number of joysticks sold throughout last year.

Managing director Peter Puresevic said of the increase: "Our target for 1990 is a million units. We do not need much of an improvement on what we have achieved so far this year to hit that target, and we are confident of success."

Continual improvements in France and Spain have also contributed to an overall 60% increase in worldwide sales of the joysticks, so as far as the Spaniards are concerned, Konix rules ole!

No Future?

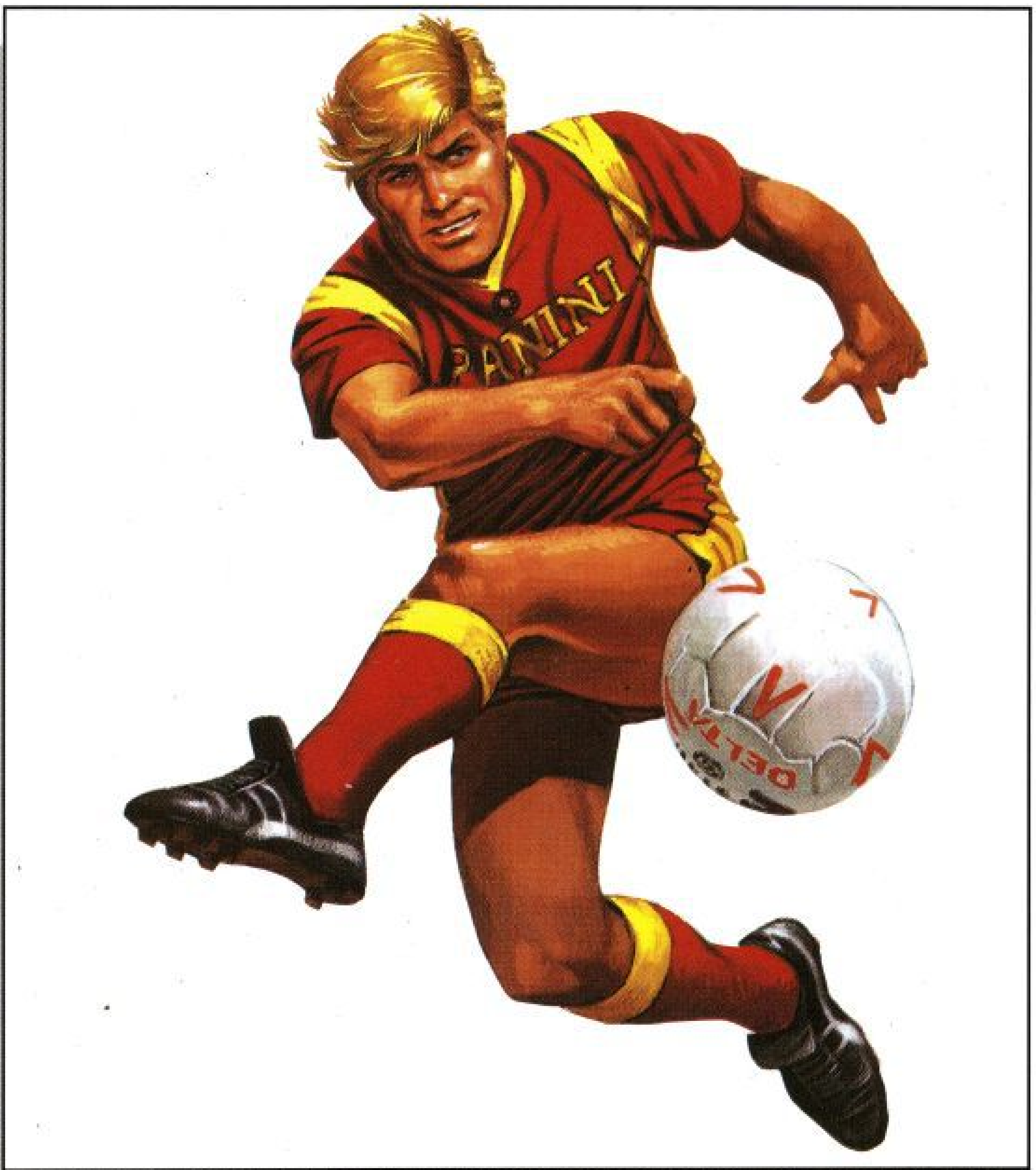
According to dubious rumours in certain publications, we at ACU are supposed to be having a hard time. Don't you believe a word of it. Here we are, fighting fit and ready to take on the world from the comfort of our new, plush offices in the City. If you haven't noticed already, our new address is:

ACU,
Panini House,
116-120 Goswell Road,
London EC1.

Make a note of it and keep on sending in your news, views, 10 liners, listings, or just about anything you want to send to us really.



COMPETITION



Oh you lucky people. Football mania has sent the ACU team and Virgin Mastertronic completely round the bend. If you don't believe us, just look at the fantastic prizes to be won this month. There are three first prizes of the football strip of your choice from the Home Countries and a super Sports Star model, as well as fifteen copies of the mega World Cup '90 game for the runners up. To get your hands on these crazy prizes just answer these three questions.

1. In which year was the first World Cup competition staged?
2. Which team holds the original Jules Rimet trophy for good?
3. What was the name of the dog that found the stolen World Cup trophy after the 1966 championship.

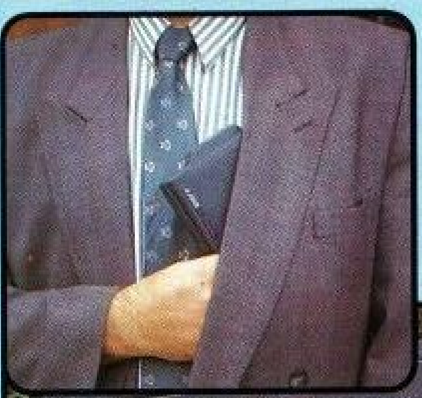
The editor's decision is final. Send your entries to:

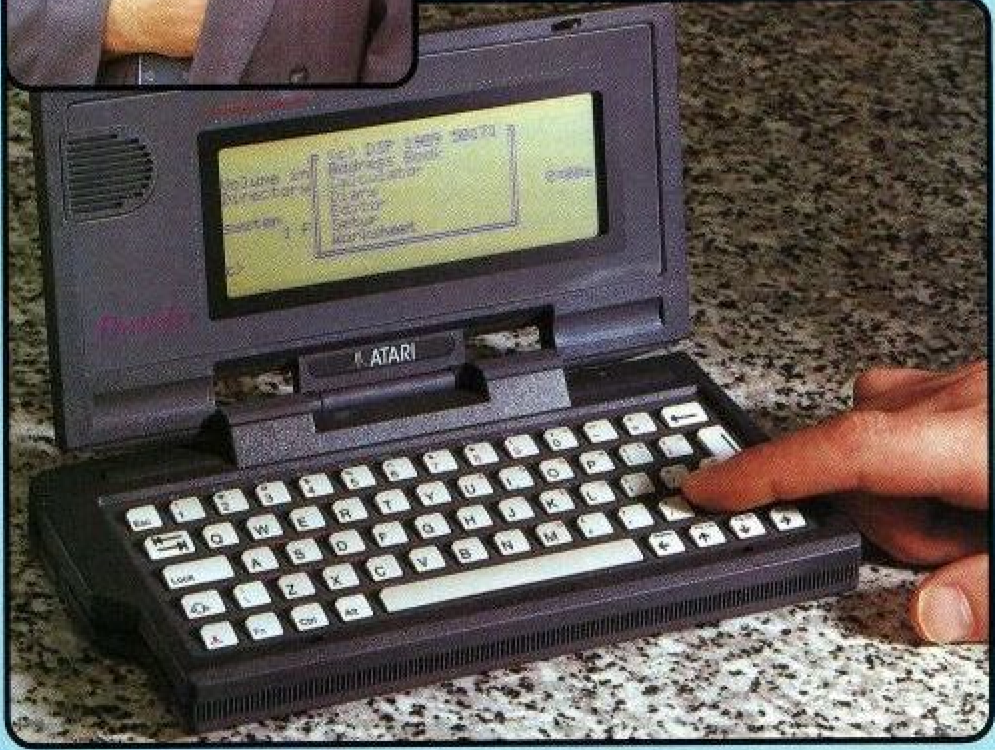
Football Crazy
ACU, Panini House,
116-120 Goswell Road,
London EC1.

Don't forget to tell us what size your strip should be on your entry.

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ATARI Portfolio





THE PC IN YOUR POCKET

The new Portfolio from Atari is the world's first pocket-sized electronic organiser that is also a powerful PC compatible computer, with a full QWERTY keyboard and scrolling 80×25 character display.

Portfolio includes everything you would expect from an electronic organiser - an address and telephone book, time manager, diary and sophisticated calculator.

Portfolio also includes several functions that you would not expect - a spreadsheet for your personal budget and expense records, as well as a text processor for typing memos and letters.

And, because Atari's Portfolio is PC compatible, it can communicate with your desktop PC at home, or in the office. You can transfer files from one to the other, to enable you to update your reports and figures with the Portfolio while you are on the move.

FOR ONLY **£249** INC VAT

SPECIFICATION

- ★ **Processor:** Intel 80C88 at 4.9152Mhz.
- ★ **Operating System:** Compatible with MS-DOS 2.11.
- ★ **Internal ROM:** 256K containing BIOS, operating system and applications suite.
- ★ **RAM:** 128K with an internal RAM disk, configurable from 8K. Externally expandable to 640K RAM.
- ★ **Keyboard:** 63 keys, QWERTY, IBM PC BIOS compatible. Buried numeric pad and function keys. Optional key click.
- ★ **Character Set:** Extended IBM ASCII (255 characters).
- ★ **Mass storage:** credit card sized memory cards (32K or 64K or 128K RAM).
- ★ **Display:** Graphics LCD, supertwist technology, MDA compatible, 40 columns x 8 lines, 240 x 64 pixels (with the option to window a full 80 x 25 character display). Keyboard controlled contrast.
- ★ **Peripherals:** 60 pin expansion BUS to take serial and parallel ports and memory expansion units.
- ★ **Size:** 8" x 4" x 1" (200mm x 105mm x 29mm).
- ★ **Weight:** 495 grammes (with batteries).
- ★ **Applications:** calendar and diary, address and phone book, Lotus 1-2-3 compatible spreadsheet, text processor, communications software.

COMING SOON!

In addition to the excellent software built-in to the Portfolio Free of Charge (see right), other software and peripheral products, such as the sophisticated Pocket Finance package and serial/centronics interfaces are available. And it doesn't stop there. Many manufacturers have recognised the potential of the Portfolio and have already started to design new peripherals and software. Products currently under development include: Serial interface with built in mini modem, Apple Macintosh interface, business, utility and programming software plus a range of adventure and battle strategy games. For further free details on the Portfolio range, fill in the coupon below and return it to Silica Systems now.

5 BUILT-IN APPLICATIONS TO GET YOU ORGANISED!

To get you started, Portfolio comes with a suite of five useful functions built-in, all accessible from a simple menu display.

TIME MANAGER

More than just an electronic diary, the Portfolio Time Manager enables you to plan your appointments via a comprehensive calendar and diary. It can even be programmed to sound an audible alarm at specific times to remind you of important appointments.

CALCULATOR

Your Portfolio will be invaluable in the office or at home as a powerful pocket calculator. It has a full range of functions, including factorial, power and root calculations, all with multi display formats and memories.

ADDRESS BOOK & DIALLER

Portfolio has a complete address book facility that allows you to store hundreds of addresses and phone numbers. And, at the touch of a button, you can retrieve any one of them, or search for a specific grouping, such as "all Italian restaurants". And, when you are ready to book your table, hold your Portfolio to your telephone mouthpiece and use its special built-in tone dialler to dial the number for you.

TEXT PROCESSOR

The Portfolio's built-in text processor program includes word wrap, line and column count, string search, in fact most of the functions you would find in a word processor. It handles printer and word processor control codes and allows easy transfer of files between Portfolio and your desktop PC.

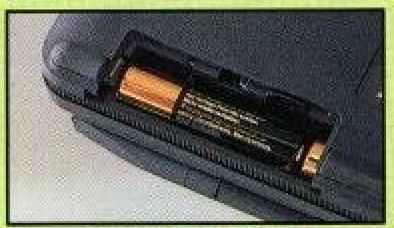
SPREADSHEET

For real calculating power, Portfolio has a Lotus 1-2-3 compatible spreadsheet built-in. It has 127 columns x 225 rows and reads/writes Lotus V1.0 and V2.01 files, so you can transfer data to and from Lotus 1-2-3 on your desktop PC. The Portfolio's 256K ROM includes MS-DOS and PC BIOS compatible systems software.



MEMORY CARDS

Portfolio can store and retrieve data and programs from its own RAM, or from small credit card size memory cards, that slot into its built-in card drive. The cards are available in three sizes, 32K, 64K and 128K, so you can carry a library of data in your pocket. The card drive also accepts ROM cards, which can contain commercial or custom software.



POWER SUPPLY

Portfolio is powered by three AA batteries which will run for up to six weeks with normal use, or from the mains using an adaptor. All the peripherals take their power from the Portfolio, so no extra batteries or adaptors are required. A 'battery-low' warning and memory back-up ensure that information is not lost when the batteries are changed.



INTERFACES & PERIPHERALS

Portfolio can communicate with other computers and supports a growing range of peripherals via a built-in 60 pin bus connector. Peripherals available include serial and parallel interfaces and memory expanders (to 640K). You can also add a card drive to your desktop PC, to enable it to read/write to Portfolio's cards.

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Please note that the majority of the forthcoming attractions are not released at time of going to press. These will be despatched within 24 hours of release subject to availability.

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COMBAT ZONE

John Cook takes a trip to the Troc for the latest arcade innovation.

So there you are – in the capital city of the greatest country in the world. You've done the British Museum, you've done the National Gallery, you've done the Victoria and Albert – the history, the majesty of it all is oozing out of every pore in your body. You feel your brain getting bigger with all this intellectual exercise – bigger and bigger.

Suddenly your forehead starts bulging. Cerebro-spinal fluid is dribbling out of your nose and spongey grey matter seems to be escaping out of your left ear. You are, as we say, Cultured-Out. Unless you do something mindless in the next five minutes – your head is going to explode.....

The only thing for it is to dive into the nearest arcade and play something, anything...as long as it's not **Tetris** or **Klax.** This is an emergency!!!!!!!!!

Well – if you happened to be under 18 years of age, it would have been curtains for you m'lad, because until very recently, because of the strict gambling laws, there was no arcade in the whole of Central London that anyone under 18 could go into. Why?

That's because most arcade owners mix the video games that we all know and love, with fruit machines – known



All the fun of the fair.



in the trade as AWP's. That stands for Amusement with Prizes. Amusement? Yes, funsters, these things are for amusement only, because they are set – quite legally I hasten to add – to pay out around 70% of what is put in the slot....and have very complicated computers inside them to make sure that if you play fruits regularly – YOU CANNOT COME OUT ON TOP!!!!! Everyone got that?

OK, so the government think that in the centre of London – only people whose minds are already in an advanced state of decay (ie, over 18) – should be allowed to subject themselves to this mind numbing humiliation of throwing money down a slot for the privilege of watching moving veggies.

Mindful of the epidemic of exploding tourist heads, however, someone has now opened an arcade slap bang in the centre of town (in the Trocadero, Piccadilly Circus – next to the Guinness Book of Records thing) with no fruit machines, which means anyone can enter the portals, no matter what age.

There's just vids, vids, simulators, bumper cars, rides, games and more vids. In fact, it could easily claim to be the best amusement arcade in the country. It's called **Funland – Luna Park**. Probably, it's entitled Luna Park because it's out of this world!

Forget every other arcade you've ever played in. Here the rules have been very substantially changed. For a start all the machines work properly. No dodgy joysticks, or broken fire buttons. There are no ex-boxers walking around in white coats, ready to throw you out at the slightest provocation. All the games are the very newest – most of them dedicated machines, rather than just ordinary cabinet games. Even pinball freaks are taken care of, with a range of the very newest pins – such as the excellent **Phantom of the Opera** from Data East.

But the first thing that strikes you about the place is – it's big – Huge in fact. Vast even. Large enough, to hold around 30 dedicated units (including four player **Super Monaco Grand Prix**!!!!!) around the same number of cabinets, a world allocation of novelty games, including rarities such as Basketball, plus full size dodgem cars, several kiddie rides for the younger members of any group, plus a sit-in simulator. And it's still not crowded. But there's more to it than even that.

The atmosphere generated is fantastic. Low lighting levels around the machines, so you can concentrate on the action, flashing disco lights to brighten things up, and up-beat pop music played loud enough to impact, soft enough to talk to your friends without investing in a megaphone. Manager Alan Rawlinson has tried to create something special here, and he's done it to perfection.

The only problem that you might encounter is – alas - money. The old adage that "you get what you pay for" never was so true. Some large dedicated games are £1 per go. Cabinet games are 50p a go, or 3 for £1.

Still, even if you feel that's a lot of money to play vids, **Funland** is well worth a visit if you are coming to London and entry is free. And who knows, maybe some of the other arcade operators around the country will come in here and find out how things should be done.

New games this month – my favourite has to be the latest from Taito, **World Grand Prix,** a motorcycle game with a difference. Now, when you ride a motorbike (or an ordinary bike for that matter) what happens when you go around a corner? You lean into the bend. That means that, instead of the horizon being nice and level (and dead easy to program, by coincidence) it's diagonal.

Diagonal is not so easy to program. In fact, until now, many thought it impossible to do that in a video game. But with **WGP**, when you take a corner, your "over the handlebars" view tilts just like it would on a real bike. Believe me, this makes what is already a fine bike racing game, into an exhilarating classic!

Very fast indeed, you control the bike using a set of handlebars, with throttle and brake just where they should be. It must be realistic. You just watch someone play it and see their head tilt as they take the bends! Highly recommended then, but don't expect to see this one on the CPC in a hurry!

Capcom has gone through a rough patch in recent months. It's been a question of great technology, shame about the game! Anyone who has played the highly derivative **UN Squadron** will know what I mean. Astonishing numbers of sprites moving about in an astonishing number of colours. But does the world need another Nemesis clone?

Well, it's latest game is called **Mercs** and although it still isn't quite up to the standard and promise of the first CP



Biking success.

System game (Capcom's in-house board) it's much better than other recent offerings.

The unkind might call it three player **Ikari Warriors**, but it's better than that, playability-wise. It is still a standard sprite combat shooty, but the graphics are good, the action is hot and two of your buddies can play with you at the same time... which means you get to compete for the numerous power-ups! Worth a try for those proto-schwarzeneggers.

Finally this month, a game from the company of the moment – Data East. Those boys at Data East have been coming up with the goodies consistently over the past year with crackers such as Robocop, Secret Agent and Midnight Resistance. Now they've come up with the bizzarely named **Crude Buster** – and I thought I'd never say it, but it's a beat-em up I enjoyed playing.

What makes the game so enjoyable is the surreal acid-house style of the cartoon graphics. The scenario is appropriately flimsy – you are the good guys going in to clean up post holocaust New York – but the action is fast and fun.

The controls are via joystick and three fire buttons, for there's plenty of scope for complex moves – although the convention of one button for kick move and the other for punch moves is maintained. The third fire button is for picking up objects and throwing them – objects such as steel girders, garbage cans, lamp-posts and the opposition!

This has to be the most entertaining part of the game, when you – an acid house, sunglass wearing punk – pick up a mutant evil dwarf and throw them across the screen! This is the stuff.

One or two player, **Crude Buster** is a very high class vid, and would look great in 16 colours on the CPC. Let's hope it makes it there.

That's yer lot for this month. See you next issue with pictures of Sega's long awaited follow up game to Afterburner, **G-Loc.**

PORSCHE

BY GEORGE FAGG

It's not exactly Chase HQ, but there is certainly a lot of fun to be had from this neat racing game. Run the program, wait for the opening screen and steer your red machine through the oncoming traffic. Hit 2603 and you are the winner, but by the end, the opposition aren't hanging about.

```
1 REM By G.Fagg. You win when you get to      a score of 2603 [26]
10 MODE 1:GOSUB 90:LOCATE 12,4:z$=" KLEINE PORSCHE":PRINT "EINE"+z$:LOCATE 17,8:PRINT"z - left":
LOCATE 17,10:PRINT"\ - right":LOCATE 11,17:PRINT "Press a key to start":CALL &BB18:MODE 0:FOR a=
0 TO 15:INK a,0:NEXT:GRAPHICS PAPER 2: [D5]
MASK 15:FOR a=40 TO 80 [D5]
20 MOVE a,0,1:DRAW 320,250:DRAW 640-a,0:NEXT:MOVE 0,270:MASK 255:FOR a=0 TO 640 STEP 10:DRAW a,2
60+RND*20,5:NEXT:MOVE 0,250:DRAW 640,250:MOVE 9,380:FILL 4:MOVE 0,256:FILL 5:FOR a=10 TO 320 STE
P 15:MOVE a+320,248:DRAW 600+a*4,0,3:M [57]
OVE 320-a,248:CLEAR INPUT [57]
30 DRAW 40-a*4,0:NEXT:INK 3,6:INK 1,3,26:INK 2,26,3:SYMBOL AFTER 238:PEN#1,3:WINDOW#1,9,12,23,25
:p=9:PRINT#1,c$:INK 5,11:INK 4,20:DIM a(8),q(48):FOR a=238 TO 255:READ a$:PRINT CHR$(25);CHR$(a)
;:FOR b=1 TO 8:PRINT CHR$(VAL("&"+MID$ [5E]
(a$,b*2-1,2)));:NEXT [5E]
40 c$=c$+CHR$(a):NEXT:a$(1)=MID$(c$,14,2):a$(3)=MID$(c$,16,2):c$=LEFT$(c$,12):a$(2)=CHR$(255):TA
G:GRAPHICS PAPER 0:s=30:FOR a=1 TO 16:READ w,x,y,z:MOVE x,y,z:PRINT a$(w);:NEXT:TAGOFF:PRINT#1,c
$;:l=4:PEN 3:PAPER 4:PRINT:PRINT"EINE  [3D]
"+z$;:PEN 0:PRINT [3D]
50 PRINT"     SCORE:":FOR c=1 TO 20:READ a:SOUND 1,a:NEXT:FOR a=1 TO 48:READ q(a):NEXT:DATA 0000
000F10E0A0A0,000000FFFFFFFFFF,000000FFFFFFFFFF,000000F00807053D,F060FF807F20203F,0000FF00FF0000F
F,0000FF00FF0000FF,0F04FF01FE0404FC,3F [8D]
207E7E7E7F7E3C [8D]
60 FOR a=1 TO s/4:GOSUB 70:LOCATE 12,4:PRINT INT((30-s)*100):NEXT:SPEED INK s/4,s/4:FOR x=1 TO 8
 STEP 2:INK q((l-1)*8+x),q((l-1)*8+x+1):NEXT:l=l MOD 6+1:GOTO 60:DATA FF00EFA8E8FF0000,FF00F7151
7FF0000,FC047E7E7EFE7E3C,001F2020E0E0C [9E]
07F,001F2120F4E0C07F [9E]
70 s=s-0.04:SOUND 129,s*20,100,8+s/6:a$=UPPER$(INKEY$):IF a$="Z" THEN p=p-3.5:GOSUB 100:e=(p<4)
ELSE IF a$="\" THEN p=p+3.5:GOSUB 100:e=(p>15):DATA 00F884C4070703FE,5858407F3C3C3C18,1A1A02FE3C
3C3C18,007EC3C3BDFF6666 [E3]
80 IF l=1 AND p=12.5 OR l=3 AND p=9 OR l=5 AND p=5.5 OR e=-1 THEN INK 1,26:INK 2,3:FOR n=1 TO 99
:SOUND 6,999,7,15,,,RND*31:a=32*(p+1.5):MOVE a+RND*64-32,20:DRAW a+RND*400-200,150+RND*200,RND*1
5:NEXT:CALL &BB00:RUN ELSE RETURN:DATA [CC]
 2,304,200,7,2,248,170,8 [CC]
90 PEN 1:INK 1,24:INK 0,0:BORDER 0:DRAWR 0,398,1:DRAWR 638,0:DRAWR 0,-398:DRAWR -638,0:RETURN:DA
TA 2,360,170,9,1,220,140,10,3,220,122,10,1,290,140,11,3,290,122,11,1,360,140,12,3,360,122,12,1,1
80,90,13,3,180,72,13,1,290,90,14,3,290 [7A]
,72,14,1,400,90,15,3,400 [7A]
100 CLS#1:WINDOW#1,p,p+3,23,25:PRINT#1,c$;:RETURN:DATA 72,15,2,304,170,6,159,159,0,213,159,159,0
,213,159,213,159,127,106,106,0,0,0,0,0,0,7,15,11,24,6,0,15,0,8,15,14,24,7,0,11,0,10,15,7,2,8,0,1
4,0,13,15,9,2,10,0,7,0,7,24,12,2,13,0, [3C]
9,0,15,2,6,24,12,0,7,0 [3C]
```

HAPPY BIRTHDAY

BY CHRIS WOOTTON

Are you leaving out Arnold when it comes to birthday celebrations? Shame on you. Using this 10 liner, your CPC can join in the fun too, by leading you all in song. By changing the / in line 40 (after 142) to a *, and by changing the 15 in line 40 to a 30, you can also transform the happy song into a dirge, if you're into that kind of thing, of course.

```
1 ' Happy Birthday [71]
2 ' by Chris Wootton [72]
3 ' [73]
10 MODE 0:nt$="0123456789AB":EVERY 2,3 GOSUB 100:LOCATE 4,10:PRINT"HAPPY"; [97]
20 PRINT" BIRTHDAY":WHILE -1:FOR a=1 TO 2:READ a$:FOR b=1 TO 40 STEP 3 [62]
30 x$=MID$(a$,b,3):oct=VAL(LEFT$(x$,1))-4:nte=INSTR(nt$,MID$(x$,2,1))-1 [C0]
40 dur=VAL(RIGHT$(x$,1))*15:noe=142/(2↑(oct+((nte-10)/12))) [AD]
50 IF nte=-1 THEN SOUND 7,0,dur,0:GOTO 70 ELSE SOUND 1,noe,dur [44]
60 SOUND 2,noe/2,dur:SOUND 4,noe*4/3,dur:SOUND 7,0,1 [4B]
70 NEXT b,a:RESTORE:WEND [3B]
80 DATA 4724714934735034B30D347247149347352350300D3 [2A]
90 DATA 4724715735435034B349355255154350352350300D6 [78]
100 INK 1,j:j=(j+1) MOD 27:RETURN [D5]
```

LAMP

BY NICK HUTTON

Ever fancied an acid house party in the confines of your own bedroom? Well here's your chance with this smart little graphics demo from Master Hutton. Watch as the picture appears on the screen, then press any key once to turn off the lamp. Hold the key down and, hey presto, instant disco effects. Guaranteed to break the ice at parties.

```
10 MODE 1:INK 0,0:INK 1,2:INK 2,10:INK 3,26:BORDER 0
   :SYMBOL 255,24,16,24,16,24,16,24,16
   :SYMBOL 254,85,170,85,170,85,170,85,170

20 FOR a=0 TO 2:WINDOW#1,2+a*14,10+a*14,12,25:PAPER#1,2:CLS#1
   :WINDOW#1,5+a*14,7+a*14,14,16:PAPER#1,0:PEN#1,1:FOR b=1 TO 3
   :PRINT#1,STRING$(3,255);:NEXT b,a

30 PEN 3:PRINT CHR$(22)CHR$(1):FOR a=0 TO 16::LOCATE a+1,23-a
   :PRINT CHR$(222)STRING$(38-2*a,254)CHR$(223);:NEXT:LOCATE 1,24
   :PRINT STRING$(80,254);

40 FOR a=-50 TO 46 STEP 2:PLOT 320+a,304:DRAW 318,354,2:NEXT:PAPER 2
   :LOCATE 20,4:PRINT CHR$(22)CHR$(0)SPACE$(2)

50 DRAWR 0,50:r=48:r2=r*r:FOR x=-r TO r STEP 2:h=SQR(r2-x*x)/5
   :q=NOT(q):p=q:FOR Y=-h TO h STEP 2:PLOT 320+x,300+y,3+2*p:p=NOT(p)
   :NEXT y,x

60 FOR x=-10 TO 10 STEP 2:y=SQR(100-x*x):PLOT 320+x,296-y
   :DRAWR 0,2*y,3:NEXT

70 INK 3,26:CALL &BB18:INK 3,0:CALL &BB18:INK 3,6:CALL &BB18:INK 3,18
   :CALL &BB18:INK 3,11:CALL &BB18:INK 3,24:CALL &BB18:INK 3,15
   :CALL &BB18:INK 3,16:CALL &BB18:GOSUB 70
```

BOUNCE

BY CHRIS WOOTTON

Time to get hopping mad with this short demo about the power of interrupts combined with good use of the hardware. Watch out for the two RSX commands, to set the screen bouncing; Bounce. on and off. The machine code interrupt outputs a new position to the CRTC (register 2) every tenth of a second, while the Bounce. off command disables the interrupt and restores the default CRTC state. Got it? Good.

```
1 ' Screen Bouncer [71]
2 ' by Chris Wootton [72]
3 ' [73]
10 FOR a=&BE80 TO &BF02:READ a$:POKE a,VAL("&"+a$):NEXT:CALL &BE80 [02]
20 MODE 1:CALL &BC02:BORDER 0:PRINT"New commands: |BOUNCE.ON" [69]
30 PRINT TAB(15)"|BOUNCE.OFF":CALL &BB18:|BOUNCE.ON:END [E6]
40 DATA 01,89,be,21,80,be,c3,d1,bc,91,be,c3,a7,be,c3,f3,be,42,4f,55,4e,43 [D1]
50 DATA 45,2e,4f,ce,42,4f,55,4e,43,45,2e,4f,46,c6,00,00,00,01,00,80,11,ca [CB]
60 DATA be,21,09,bf,cd,ef,bc,01,05,00,11,05,00,21,03,bf,cd,e9,bc,3e,2e,32 [2F]
70 DATA a5,be,3e,01,32,a6,be,c9,3a,a5,be,57,3a,a6,be,82,01,02,bc,ed,49,06 [B9]
80 DATA bd,4f,ed,49,32,a5,be,fe,32,30,05,fe,2c,38,01,c9,3a,a6,be,ee,ff,cb [70]
90 DATA c7,32,a6,be,c9,01,02,bc,ed,49,01,2e,bd,ed,49,21,03,bf,c3,ec,bc [1B]
```

DOM-S-DOS

BY NICK HUTTON

Yes, I know there are more than ten lines, there's no need to shout. This is such a handy utility, we thought we'd include it in the mag anyway. Produced as an alternative to the well known MS-DOS disc operating system, in a mere 13 lines, you can now catalogue a disc, rename, erase, move, run and even find out the format of a disc and view erased files. Type it in and save it on each side of your disc under your own filenames and watch it go.

```
10 CALL &BB4E:POKE &BE78,&FF:|USER,0:MODE 2:PAPER 3:CLS:INK 0,0:INK 1,26:INK 2,0
:INK 3,26:BORDER 26:PEN 0:PRINT TAB(16);"DOM-S-DOS
 v4.1":PRINT:PRINT TAB(7);"  by Nick Hutton":WINDOW #1,9,29,5,13:PAPER#1,2:CLS#1
:WINDOW #2,10,30,6,14:PAPER#2,0:CLS#2
20 PRINT #2,"1..Catalogue":PRINT #2,"2..Rename":PRINT #2,"3..Erase":PRINT #2,"4.
.View Erased Files":PRINT #2,"5..Move File":PRINT #2
,"6..Format Identity":PRINT #2,"7..Run":WINDOW SWAP 0,3:CLEAR:LOCATE 10,17
30 PEN 0:PAPER 1:INPUT "Enter option (1-7)";opt%:PAPER 0:INK 0,0:INK 1,26:PAPER
1:PEN 0:ON opt% GOSUB 40,50,60,70,80,90,130:IF opt%>
=1 OR opt%<=7 THEN GOTO 30
40 CAT:CALL &BB18:RUN
50 INPUT "Old filename:",of$:INPUT"New filename:",nf$:IF of$="" OR nf$="" THEN R
UN ELSE |REN,@nf$,of$:RUN
60 INPUT"File to ERASE:",f$:IF f$="" THEN RUN ELSE |ERA,@f$:RUN
70 POKE &A701,229:CAT:CALL &BB18:RUN
80 INPUT "Filename:",f$:INPUT "Present USER:",pu$:INPUT "New USER:",nu$:IF f$=""
 OR VAL(nu$)<0 OR VAL(pu$)>229 OR VAL(pu$)<0 OR VAL(
pu$)>229 THEN RUN ELSE n$=nu$+":"+f$:o$=pu$+":"+f$:|REN,@n$,@o$:RUN
90 POKE &BB5A,&C9:CAT:POKE &BB5A,&CF:a=PEEK(&A89D)
100 IF a=0 THEN PRINT"DATA-FORMAT":CALL &BB18:RUN
110 IF a=1 THEN PRINT"IBM-FORMAT":CALL &BB18:RUN
120 IF a=2 THEN PRINT"CP/M-FORMAT":CALL &BB18:RUN
130 INPUT "File to RUN:",rf$:IF rf$="" OR LEN (rf$)>12 THEN RUN ELSE RUN rf$
```

SQUASH

BY MARC EADE

Eyes down for excellent results with this handy image compressor and decompressor. Run the program, insert your own piccies and follow the menu to choose your options. It will take about four minutes if you want to compress, and two for decompressing, so be patient, it works

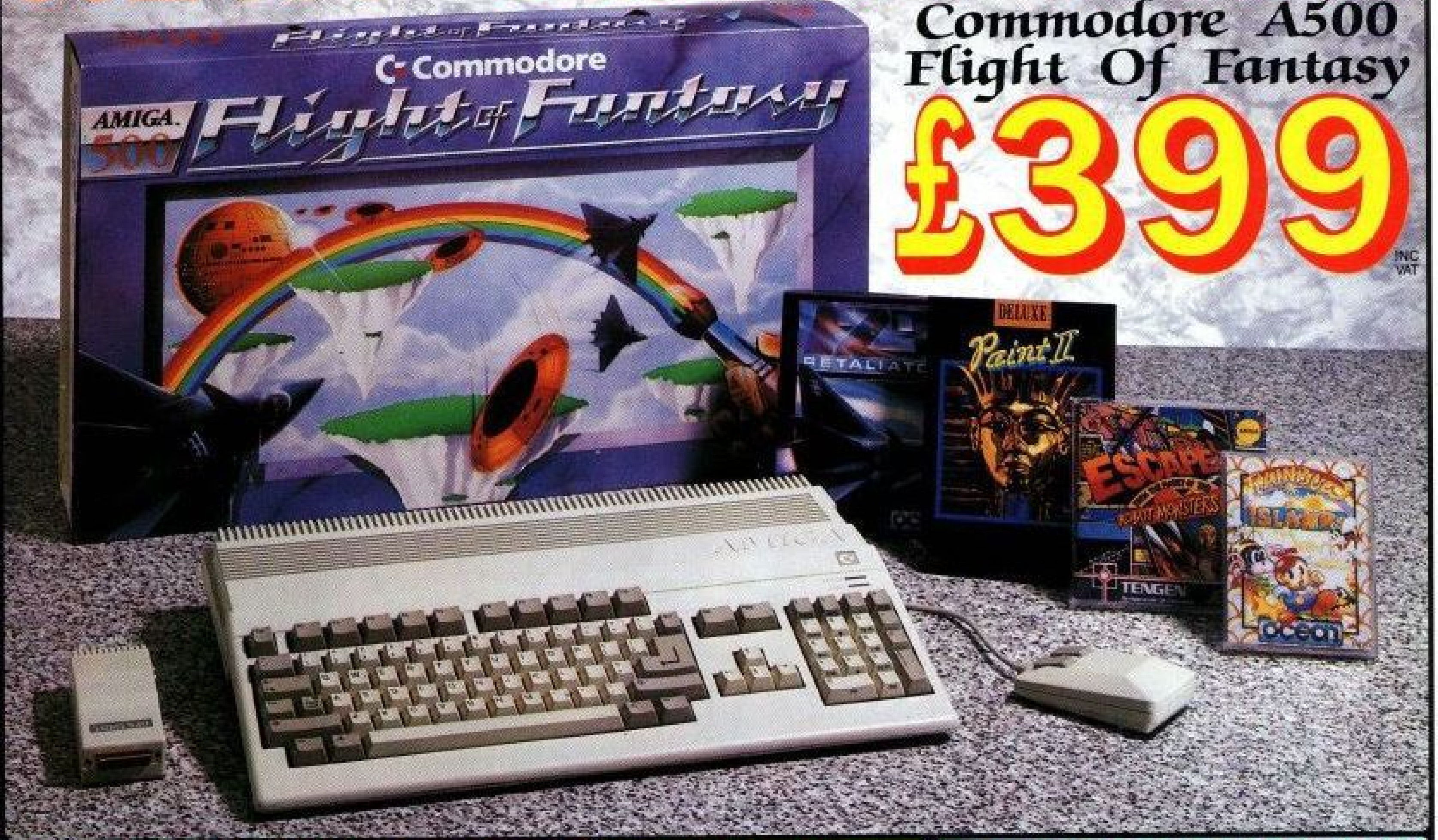
```
10 CLEAR:MEMORY &3FFF:MODE 1:INK 2,0,24:SPEED INK 10,10:INK 0,13:INK 1,0:BORDER 10:CLS:LOCATE 14
,1:PRINT "S Q U A S H":LOCATE 28,25:PRINT "By Marc Eade":WINDOW #0,1,40,2,19:WINDOW #1,1,40,20,2
4:ON ERROR GOTO 100  [B4]
20 LOCATE 12,7:PRINT "1) Compress Image":LOCATE 12,9:PRINT "2) Decompress Image":LOCATE 12,11:PR
INT "3) Quit":LOCATE 1,17:PRINT "Use ";CHR$(240);" and ";CHR$(241);" then return to select optio
n":x=1:o=0 [48]
30 LOCATE 10,5+(o*2):PRINT " ":LOCATE 10,5+(x*2):PRINT CHR$(197);:FOR w=1 TO 150:NEXT [5D]
40 IF INKEY(0)<>-1 AND x>1 THEN o=x:x=x-1:GOTO 30 ELSE IF INKEY(2)<>-1 AND x<3 THEN o=x:x=x+1:GO
TO 30 ELSE IF INKEY(18)<>-1 THEN CLS:WHILE INKEY$<>"":WEND ELSE GOTO 40 [B5]
50 IF x=3 THEN 100 ELSE CLS:CAT:LOCATE #1,5,1:INPUT #1,"Enter name: ",n$:IF LEN(n$)>8 OR LEN(n$)
=0 THEN LOCATE #1,3,3:PRINT #1,CHR$(7)+"Error: Please try again,";:PEN #1,2:PRINT #1," press spa
ce":PEN #1,1:WHILE INKEY(47)=-1:WEND:C [79]
LS #1:GOTO 10 [79]
60 CLS:CLS #1:LOCATE 5,10:INPUT "Enter screen mode : ",m:IF m<0 OR m>2 THEN LOCATE 3,12:PRINT CH
R$(7)+"Error: Wrong screen mode,";:PEN 2:PRINT " press space";:PEN 1:WHILE INKEY(47)=-1:WEND:CLS
:GOTO 60 ELSE MODE m [BC]
70 IF x=1 THEN INK 2,3:LOAD n$+".bin",&C000:GOSUB 80:SAVE n$+".arc",b,&4000,(z-&4000):GOTO 10 EL
SE IF x=2 THEN LOAD n$+".arc",&4000:GOSUB 90:SAVE n$+".bin",b,&C000,&4000:GOTO 10 [9D]
80 x=&C000:y=&FFFF:z=&4000:WHILE x<>y:c=0:POKE z,PEEK(x):WHILE PEEK(z)=PEEK(x) AND x<>y AND c<=2
54:c=c+1:x=x+1:WEND:z=z+1:POKE z,c:z=z+1:IF z-&4000>&4000 THEN CLS:PRINT "Cannot compress; not e
nough redundency in image.":END ELSE W [57]
END:RETURN [57]
90 z=&4000:x=&C000:y=&FFFF:WHILE x<>y:c=PEEK(z):z=z+1:l=PEEK(z):FOR co=1 TO l:POKE x,c:x=x+1:NEX
T co:z=z+1:WEND:RETURN [B1]
100 MODE 1:INK 2,24,0:IF x=3 THEN END ELSE LOCATE 5,12:PRINT CHR$(7)+"Error: Disc error";:PEN 2:
PRINT " press space";:PEN 1:WHILE INKEY(47)=-1:WEND:RESUME 10  [38]
```

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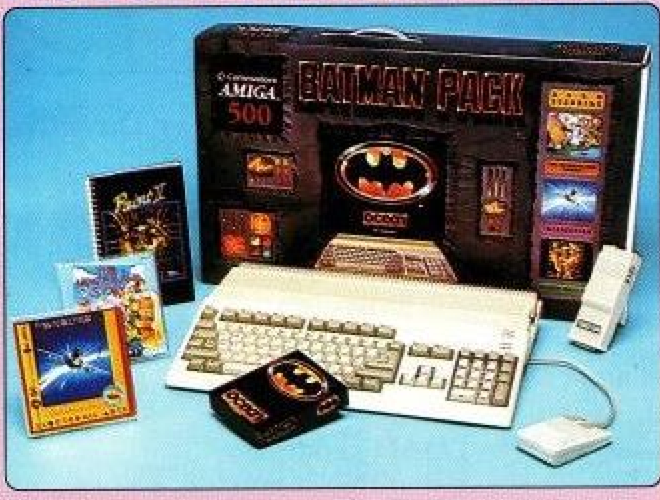
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Nibbles and bytes

John Kennedy assembles the pieces of machine code madness



In the last few thrill packed months we have explored the exciting world of machine code and how to go about using it on your trusty CPC. We even took a break for a quick game of Life.

However, now is the time to start getting serious. Ok, you know a bit about Z80. You know how to type the listings into your computer using a Basic program. You even know that you must put a RETurn statement in at the end or your code will crash.

If you have been experimenting, you will know that converting all those mnemonics into the hexadecimal codes was a difficult task. And as for calculating the relative jump address! Yuck!

No-one has to suffer these injustices any more, because there are programs that will do the suffering for you automatically. I am of course, referring to Assemblers.

Assemblers are jolly useful programs to have. They use two 'files' – a Source code file and an Object code file. A file is simply a collection of data all stored in memory or on disk or tape. A letter saved from your word processor could be a file, or some data produced by a database. There is nothing special about files, they are just useful ways of bundling information into easy to handle packets.

To use an assembler you first produce the source file, which consists of all the mnemonics you wish to be incorporated into your program. The assembler gets to work on this file, thinks for a bit, and then produces the Object file. This file contains all the actual code, complete with all the jump addresses and labels calculated for you.

The source file could be entered from within the assembler itself, or be a separate file produced by another program – a word processor for example.

Of course in practise there are usually one or two mistakes in the source code file which you must edit and correct before you are finished. Eventually you will have a completely error-free program, all ready to save and then run. If you are lucky, it might even work. Just because the assembler produces the object file for you, doesn't mean your program is perfect. For example, the assembler doesn't know that a RET is needed at the end of the program, so if you left one out everything would appear to be ok except for when you actually ran your program. Nasty. Moral – always, always, always save your source code before you execute your object code.

Within the source file, you are allowed to put one or two extra commands. These Directives provide information needed by the assembler, or ask for something to be displayed on the screen for you. The directives change depending on which assembler you are using, but here are some of the more common ones.

Common Assembler Directives

ORG <address>
(short for 'ORIGIN').
This directive tells the assembler where you want the object code to be stored in memory. For short programs, addresses around &8000 are usually ok.

LOAD <address>
Using this command, you can fool the assembler into putting the object code somewhere else. For example, say your program had to run at a certain address, but the address was taken up by the actual assembler program. Bit of a problem eh? Not with the LOAD command! The code will still be assembled as though it was going to the ORG address, but in actual fact it will be stored in the LOAD address.

<label> **EQU** <address>
(short for 'EQUATE')
This is an instruction whose only purpose in life is to make your life easier. Imagine your program was always calling a subroutine at &8032. Instead of having lots of instructions such as

```
        JP &8032
or      CALL &8032
```

if you had placed the command

```
        MyRoutine EQU &8032
```

at the start of the program, from then on you could say things like

CALL MyRoutine
and JP MyRoutine

READ <file>
Instead of taking a source file from memory where it has been typed in with an editor, take it from a file stored on tape or disc.

WRITE <file>
Send the object code directly to a file where it can be loaded and executed later. This is useful if your program is soooooo big that it won't fit in memory at the same time as the assembler and the source code.

DUMP or **LIST**
Produce a table with all the labels and their addresses. A table such as this is useful to see where the various parts of your program are stored, or for PEEK and POKING values directly into memory.

PRINT <text>
Display some text on the screen so you can tell what stage the assembler has reached.

DB
Now we reach a good one. This command allows byte values to be stored directly in memory. For example, if you had the line:
DB 42,42,42
in your source code, then at some point in the object file there would be three bytes with the value 42 all in a row. You can also use DB with text, such as:
DB "HELLO"
which will convert the text into the ASCII codes representing each letter. Text and graphics can be mixed like this:
DB "Hello",32,"Colly",32,"Wobbles"
which uses the ASCII code for a space. DB is useful for storing text such as 'GAME OVER' and 'WELL DONE EARTHLING' inside your source files.

DS
This is similar to DB except it just reserves some bytes for your program to use later. If you needed a table of 100 bytes to store names in, you could put the line
DS 100
in your program.

HEXADECIMAL

Right back at the start of our tutorials, I mentioned hexadecimal, and what a jolly useful thing it was. I also promised that I would explain it, so here goes.

Most humans can count to ten fairly well, using their fingers if necessary. We use a Decimal numbering system, because once the numbers reach ten strange things happen.

It is best explained by looking at digits, so please consider the sequence below.

```
tens column----  ----units column
              00
              01
              02

and so on, up to

              09
              10
              11
```

As soon as ten is reached, we put a one in the tens column and then start again from zero in the units column. All very primary school stuff. But have you ever wondered why we chose to make ten the number where all the changes occur? Why not five or seven or thirty-two? The answer probably has something to do with how many fingers we have, so consider a race of aliens from the planet Zarqyl who have eight fingers on each hand. These aliens are excellent pianists, and are well known for their brilliant computer programming. How do they do it?

Well, they have a head start, because instead of using a Decimal (base ten) numbering system, they use a hexadecimal (base sixteen) system. When they are counting and reach nine, they don't stop to put a one in the tens column, instead they count on until they run out of fingers. THEN they put a one in the next column, and start again. Obviously they would run out of numbers to use if they used our old-fashioned earth numbers, so they have invented their own new numbers. I think you will find that they look surprisingly familiar.

```
16's column----  ----units column
              00
              01
              02

and so on, up to
              09
              0A
              0B
              0C
              0D
              0E
              0F
              10
              11
```

And there you have it. But why does hexadecimal make computing easier? Well, now each byte can be represented by a pair of hex digits. Even if the decimal version is three digits, the hex one is two. Here are some examples:

decimal	hexadecimal
00	00
19	0A
15	0F
16	10
42	2A
100	64
200	C8
255	FF

If you want to split each byte into 'nibbles', that is use two groups of four bits, you can easily tell their values if you are dealing in hex. Another example:

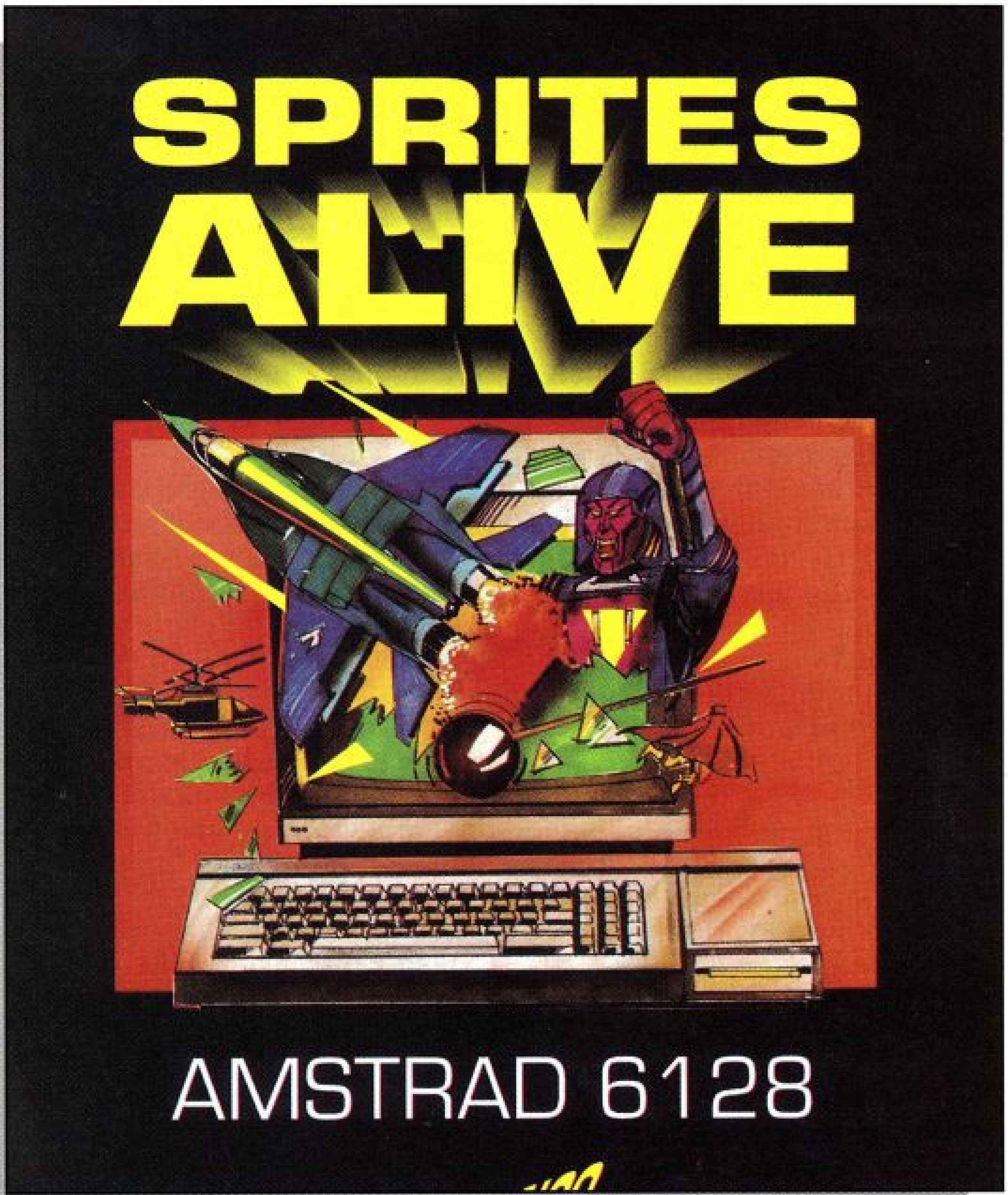
```
binary          hexadecimal
0000  1111      0F           decimal
0001  1000      18           15
 /     /        \ \__        24
1st    2nd       \   \
nibble nibble   1st    2nd
                nibble nibble
```

Which brings us neatly to the end of our introduction to computer mathematics. Bye for now!



High Sp(i)rited

Duncan Evans checks out the latest packages from Glenco.



The trouble with producing fast action arcade games or graphic intensive educational packages, is that unless you want your masterpiece to move as fast as progress on the Channel Tunnel, you have to resort to a fairly low level language, or a high level one with a fast compiler. Low level languages such as machine code or assembly are fast and powerful, but also notoriously difficult for beginners to get to grips with.

The ideal language for someone with ideas but no great programming skills, is of course Amstrad Basic. Unfortunately, good though it is, CPC Basic is somewhat lacking in the user definable and controllable graphical object department. It doesn't let you create, move and detect sprites in other words.

There have been a few attempts to rectify this situation on the CPC in the past, namely in the form of the Pandora and Laser compilers, but Glen Cook, director of Glenco wasn't impressed with either of those, so he wrote his own. Sadly for 464 CPC owners you're going to have to get a RAM upgrade to 128K to be able to make use of Sprites Alive. Even then, certain modifications are necessary to the programs because of differing ways in which the 464 and 6128 accept RSX commands.

Sprites Alive comes in two flavours, a Basic version and a Compiler version. Both perform the same job in that they add over 70 new RSX commands to Amstrad Basic, and naturally most are sprite orientated. The difference is that the Basic version contains a sprite design package, and it offers a Basic programming environment to try out the new commands and debug programs. The compiler version needs its source code, the program, to be produced in CPC Basic or with a word processor, and then saved as an ASCII file. This file is then compiled by the Compiler into faster code than exactly the same program running under the Basic version. However, it is far less friendly, as the compilation process must be used every time you test out a single new function. The obvious answer is to buy both the Basic and the Compiler versions for the steep price of £60. Personally I feel that this is far too much. Glenco should charge about £25 for either package, or £40 for both. However, on to some of the nitty gritty.

The sprite design package is the first place to start. Sprites in Sprites Alive can be any size up to 32 pixels by 32 pixels, which is roughly four characters square (the programs work in either Mode 0 or Mode 1 so a 32 x 32 sprite in Mode 0 is obviously going to be wider than it is high thanks to the cruder pixel resolution). This max size gives you a reasonable size sprite, not huge, but if you want bigger then define a couple of sprites and move them around together.

The maximum number of sprites that can be defined is 64, which is the same number of drawings which can be defined. Drawings are the backbone of the entire sprite making process as not only do they form the shapes for the assigned sprites, but they serve in animation sequences. A sprite can have up to 16 animation sequences, with each sequence containing eight drawings for each potential direction it could move in. This is facilitated by the clumsy command :SEQUENCE, sn (sequence number) 1l, 1h, 2l, 2h, 3l, 3h, 4l, 4h, 5l, 5h, 6l, 6h, 7l, 7h, 8l, 8h.

Thankfully this only needs to be done once for a sprite. But when you have quite a few sprites, then there's a lot of defining to be done.

The actual drawing package for the sprites is fairly crude, it doesn't support a joystick either, but usable, and at least you can redefine the colours used from the CPC's palette. Two cursors down either side of the grid covering

the sprite size (maximum definition of 32 x 32 as mentioned earlier) are used to point to a pixel to be coloured. This is easy enough for small sprites but very awkward for large ones. Another down point is that there is no repeat function when colouring pixels, so each and every pixel has to be co-ordinated, then coloured in. Still, it works, however clumsily, and data can be saved for incorporation into the main Basic and Compiler programs.

The commands offered by Sprites Alive are quite comprehensive, covering general screen colours, text printing to the screen (four times faster than normal), collision detection, sprite speed, missiles, nodes and sound effects. The Compiler version also offers labels, as line numbers are optional.

Sprite collision detection is at the heart of Sprites Alive but besides offering powerful functions, it also has a number of idiosyncrasies that throw up problems. The sprites normally bounce off each other when contact is made, but because of the way the system works, it is possible for them to become locked together (if they are of a design whereby coloured elements could fit into black areas). This problem can be solved – the manual gives fair warning and advice on the subject, but in a commercial package this is unacceptable.

Then, because of the way the sprite detection system works, there is the problem of deliberately overlaying one sprite over the top of another. The case used to illustrate this in the manual is that of a platforms and ladders game with a man climbing up a ladder, where both are sprites. The solution offered is to use colours for the sprites that do not show up on the collision detectors. An awkward compromise to make.

While Sprites Alive looks a little amateur in these regards, it scores heavily in the provision of nodes. These are points on the screen that sprites can be set to move through, so producing Pac-Man or games with patrolling sprites is made much easier. The system used to plot the nodes is not as sophisticated as it could have been, such as that used by the Shoot 'Em Up Construction Kit (not available on the CPC anyway), but then this is a sprites package, not a dedicated games creator, so you can't really complain as it does the job asked of it.

A very nice feature comes in the form of missiles, which once defined as sprites can be ordered to fire automatically, and in the direction that the host sprite is facing. It's a handy little extra if you are contemplating some form of violent exercise.



Speed is very important in a sprite package, and I'm afraid to say that despite cutting the odd corner, the smooth pixel by pixel animation in Basic is too slow to be usable. You have to make the sprites move at least two pixels per step to achieve reasonable speed, and then the animation can be flickery as well. Whether you like it or not you have to have the Compiler version if you want smooth and steady animation, or cruder and less impressive animation, but the speed necessary for a fast action shooting game. However, just before you rush out thinking XENON II here we come, there is another drawback to Sprites Alive. You can't scroll the screen because it confuses the co-ordinate system.

The manual is generally very informative, if not particularly lucid in places, while the demonstration programs that come with each package show something of what the system is capable. At this point though I have to lambast Glenco for the absurdly lengthy procedure that needs to be undertaken to make the demos in the Compiler version work. This is not the way to provide a demo program. I suppose that it has been done this way because of a lack of space on the disc for source code and a compiled version.

There are some powerful features in Sprites Alive, and in some ways it qualifies as a simple games creator. With possibly more development work and enhancements Glen Cook could have a product that Palace Software would be happy to licence. As it is, Sprites Alive does offer educational or utility designers a comprehensive package to enliven their own products.

The claim made on the back of the packaging, namely, "At last, the truly professional games designing system which will allow you to write quality arcade style games with ease," is stretching the truth rather too far as you still have to be able to program (in Basic) to produce the games.

You can create impressive products with Sprites Alive, within the limitations outlined, but it won't be a painless and easy task.

POINTS FOR

Basic, Compiler, and Sprite Designer form complete package.
Smooth, pixel by pixel animation.
Faster than Pandora and Laser Compilers.
23k RAM left for programming.
Complex automatic animation.
Automatic missile commands.
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70 RSX commands usable in a Basic programming environment.

POINTS AGAINST

Requires 128k RAM.
Not compatible with RODOS.
Compiler only accepts integer variables, single dimension arrays, and arrays cannot be used in calculations.
No string variable allowed.
Basic too slow for pixel by pixel animation.
Screen cannot be scrolled.
Sprites can stick together after collision.

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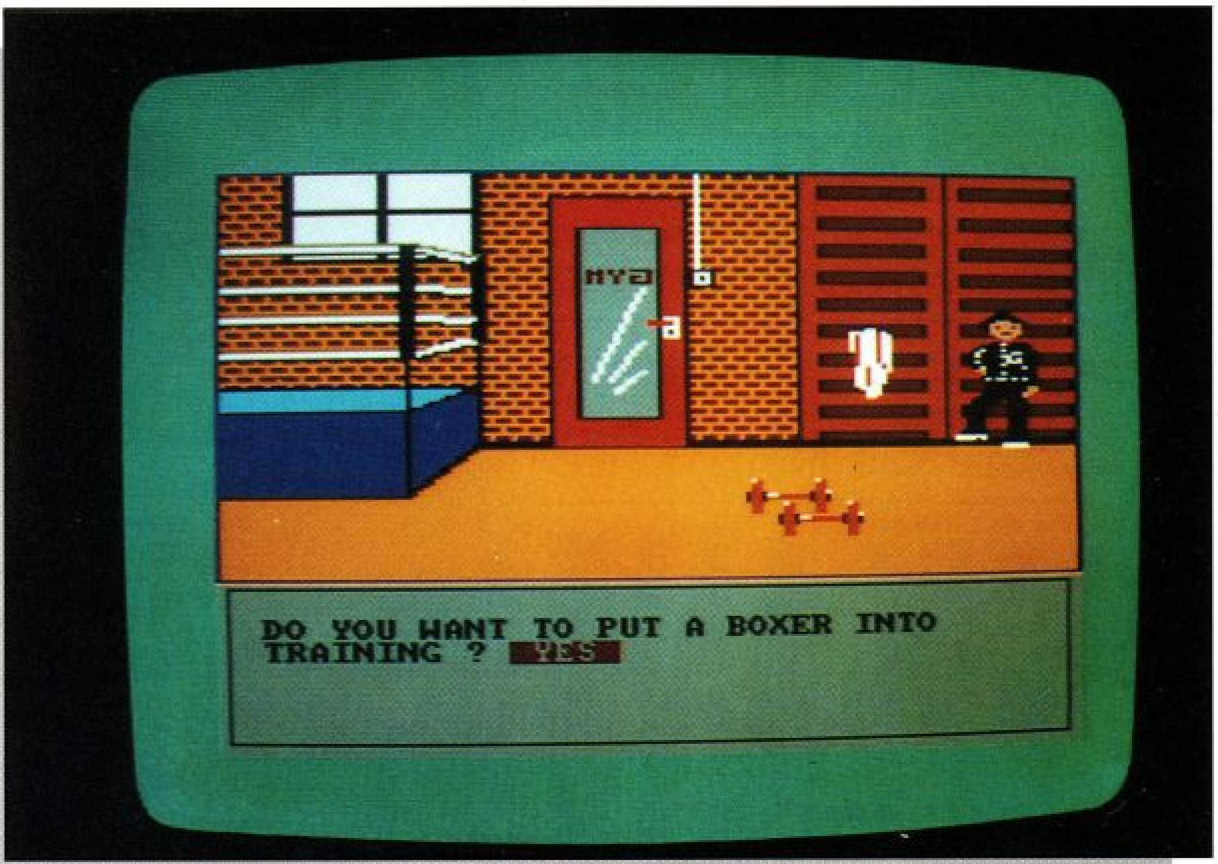
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8	(NE)	Road Blasters	Kixx
9	(5)	1943	Kixx
10	(8)	Batman - The Movie	Ocean
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Seconds out, Round One. If you're cruising for a bruising and subscribe to the no pain, no gain school of life, then World Championship Boxing Manager should be right up your street.

Picking out your own boxers at the ripe old age of eighteen, your task is to manage them through the rough and tumble world of professional boxing, bringing them up through the rankings and giving them shots at the big prize titles, as well as making a tidy profit for yourself, of course.

Within your own office, the options available should keep you busy for a little while at least. There's a filing cabinet to keep you updated on as many as 100 different boxers, a handy filofax for rapid information access, and a phone for you to keep in touch with the friendly opposition to arrange and confirm fights.

Outside of the office, you can take a trip to the physio to check up on your latest signing's fitness, or in the gym you can set about a little training to keep him in trim.

Each week, you are invited to attend an evening of classic bouts, where you can listen to leather on face and body, but if you don't feel up to it, you can always catch the results of each fight by mail, or by sending along a scout to watch in your place.

When you actually get round to setting up a fight, don't be greedy or overeager to lift your signing's ranking too soon. If you try to match your raw slugger against a title holder for example, his manager will tell you where to get off in no uncertain terms. Also, if you ask for too much of the purse to begin with, you won't find too many opponents for your prize fighter.

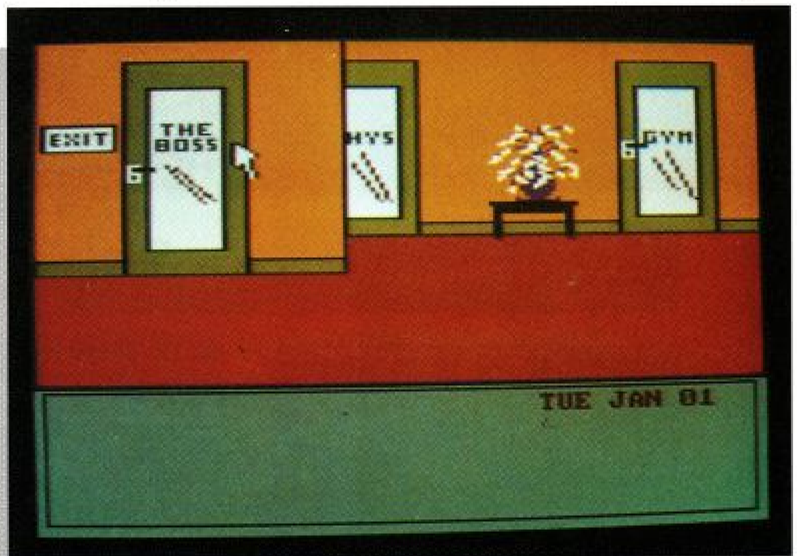
By taking it easy, you can arrange some beneficial bouts that will see your fighter rising through the ranks at a swift rate of knots. But don't forget to confirm each fight with the boxing boards, either the Federation of World Boxing, or the World Council of International Boxing, or the bout will be cancelled.

As for the gruelling slugging matches themselves, in between each of the ten rounds, you get the chance to step in the ring with your seconds to administer much needed relief to your star. The cold iron will help for the bruising, while the water bottle and adrenalin will refresh him for the next onslaught.

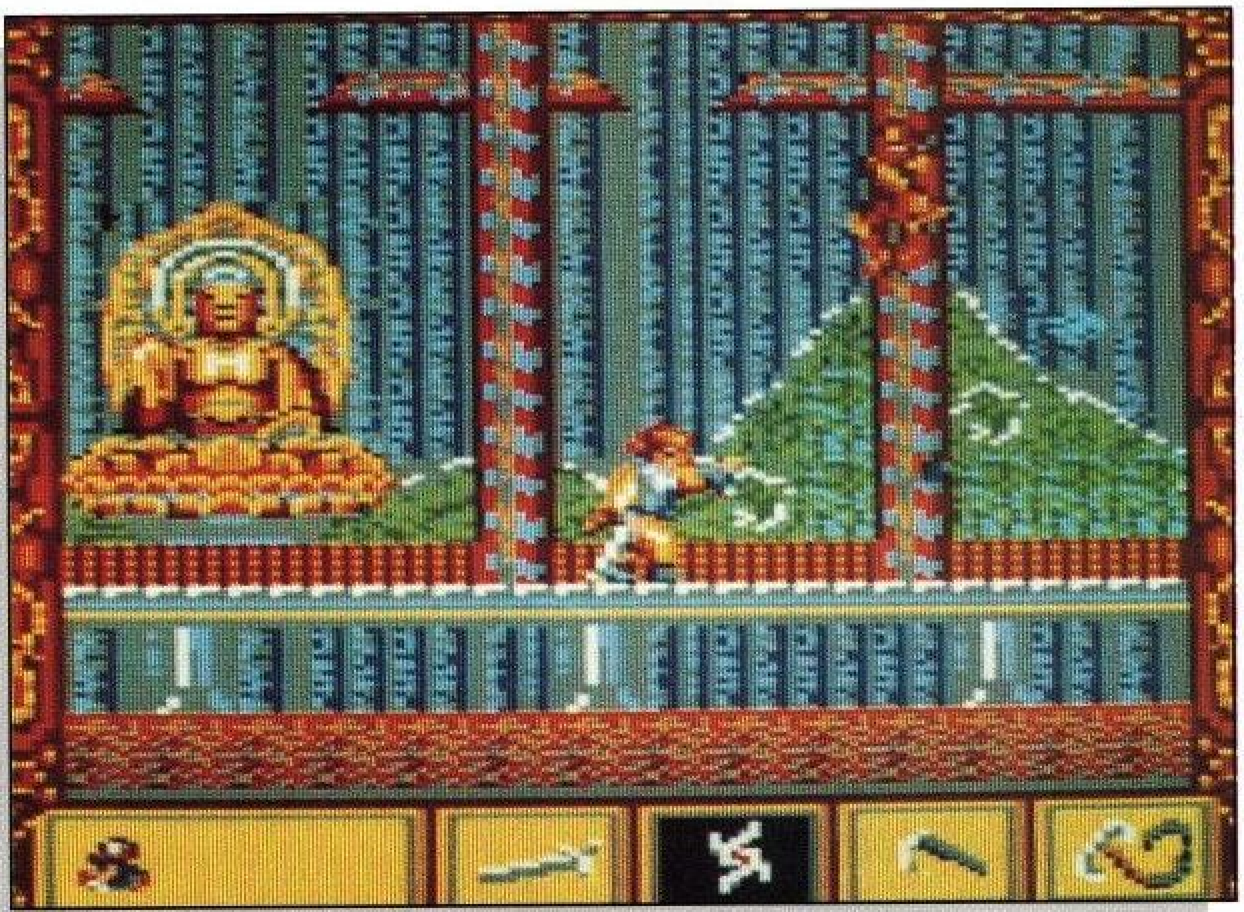
Changing fight tactics between rounds can also help to unsettle your opponent in the ring, and could lead to that all important knockout blow.

Despite not being able to watch the bouts, you certainly get a feel for the action from the dialogue. Boxing Manager is extremely playable, the graffix are good, and if you like management games, this one will be hard to beat (urgh!).

Chris Knight



ROUND-UP			
NAME	Boxing Manager		
FROM	Goliath Games	PRICE	Disc £12.99 Cassette £9.95
80%	N/A	82%	
GRAFFIX	SONIX	PLAYABILITY	VERDICT



Ninja Spirit

Another dose of oriental combat as you take on the warlock and his evil cronies

Ah so! Loosen up your shurikan throwing arm and get ready to take on the evil warlock in another round of Oriental combat, this time from Activision.

Much as the idea of jumping, throwing, slashing and general dealing of death in an eastern fashion appeals, there must be a limit to the number of scenarios and titles with the name ninja in them – or maybe not.

Ninja Spirit will have you jumping, throwing, etc, etc.. over six levels, against the evil ninja hordes of the warlock, and they are no duffers with the old samurai swords either.

There are four different types of weapon to choose from as you start off on your quest, ranging from the trusty sword, through Shurikans, to what look like throwing hammers, but for swift killing and sure satisfaction, the throwing stars are hard to beat.

Doing away with the baddies will afford you a tasty bundle of power ups, doubling your strength and giving you an extra ninja spirit to ease your passage to the next level. Considering the sheer numbers of the enemy thrown at you, you will need all the help you can get.

Making sure you have your bonus spirit as you reach the end of level guardians is also a smart move – they are certainly no mean challenge. If a stray sword cuts you off in your prime, you lose all of the power ups you have gained, so be warned.

Scrolling on the first four levels is horizontal and fairly smooth, with good graffix. The fifth level sees your spirit jumping from ramp to ramp up a vertical cliff face, and keeping your balance whilst dealing with the baddies can cause a few problems for the novice ninja.

On your way to meeting with the warlock himself on the final level, you have to perform the same in reverse, jumping off of the cliff and moving around to tackle the ninjas as they approach you from below, very nasty indeed.

As far as it goes, Ninja Spirit is harmless fun, and fairly playable with some nice sound effects thrown in for good measure, but it certainly won't captivate for hours.

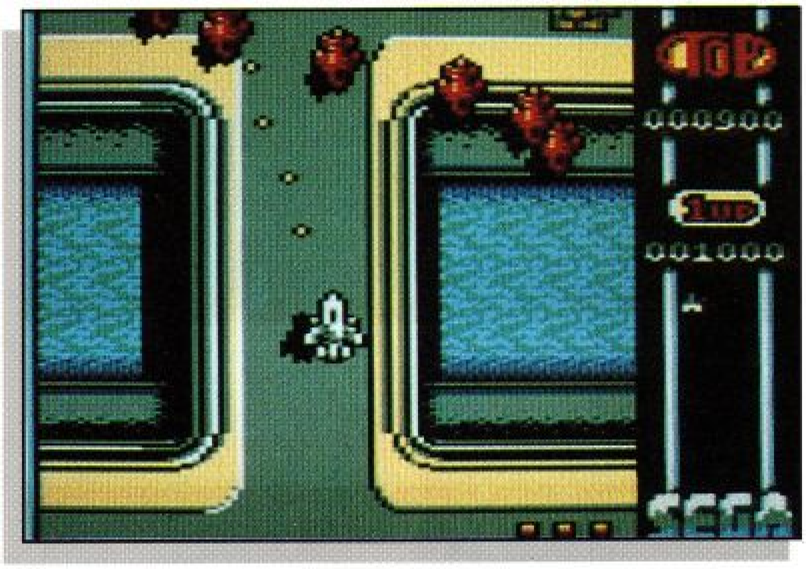
For 464 owners, the loading sequence is a little longwinded, so it may be worthwhile waiting for Ninja Spirit to come out in a compilation before rushing to the shops and parting with your hard earned cash on yet another oriental offering

John Taylor



ROUND-UP

NAME	Ninja Spirit		
FROM	Activision	PRICE	Disc £14.99 Cassette £9.99
68%	65%	62%	
GRAFFIX	SONIX	PLAYABILITY	VERDICT



Sonic Boom

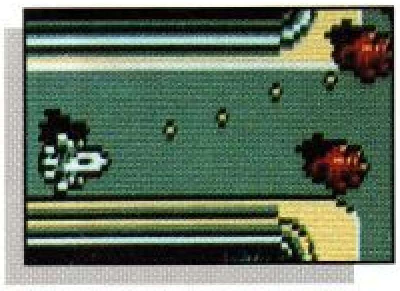
Put on your goggles and clear the skies before the enemy gets too close

Wizard Prang, Ginger! A deadly accurate blast from the forward gun turret of your supersonic jet aircraft and another enemy plane bites the dust, exploding in a ball of flames as it falls to the ground at breakneck speed.

In front of you, the next line of defence forms, fires a volley of bullets, breaks up, reforms and lets off another round of lethal ammunition in your direction.

Using the joystick deftly, you manoeuvre yourself around the first barrage and sweep around to give them some of their own medicine, but you haven't noticed the tank and the gun barrel tracing your every move as you move in for the kill.

The last thing you see before entering oblivion is the flash of the missile as it leaves the ground, destined to spell your ruin, and then its all over. Never mind, you still have two more lives.



Despite the slow loading routine on the cassette format, Sonic Boom is well worth waiting for, as you take the battle to the enemy in your mean airborne machine.

As you take to the pilot's seat, there are five levels of fast and furious action ahead of you, over cities, deserts, oceans and military installations.

In your quest to make it to the end of each stage, you will come up against enemy aircraft, tanks and SAM's, all of which need to be destroyed before they get to you.

Although you start on your own, finishing off certain rows of the defence will sprout a red parachute onto the screen. Collect this as it zig-zags down and you get an extra pair of wings to fly and shoot in formation with your own aircraft. Collect two and you can dramatically increase your firepower, although you do become a little bit of an easy target with all of the add-ons.

If the enemy advance is getting a little too hot to handle, you have just one more line of defence; your supershots.

Wait until the enemy starts to crowd the screen, then let fly with these handy smart bombs and watch the baddies evaporate. A well timed supershot can get you out of a lot of tricky situations, but use them sparingly. Watch out for the yellow parachutes to replenish your supply of widescale death bringers, then let the enemy have it.

At the end of each level, you will encounter some serious resistance in the form of an aircraft carrier, oil rig, plane, submarine, and take care on the final stage as you approach the big, bad, ugly alien.

Your sonic plane is easy to handle as the screen scrolls smoothly towards you. The graffix are varied and colourful, and explosions certainly sound painful as you clear the skies of the enemy.

Sonic Boom is a good, clean, honest-to-goodness shoot-em up, so if you're trigger finger is beginning to itch, take a hold of the joystick and get booming

Chris Knight



	ROUND-UP		
NAME	Sonic Boom		
FROM	Activision	PRICE	Disc £14.99 Cassette £9.99
76%	72%	80%	
GRAFFIX	SONIX	PLAYABILITY	VERDICT



Castle Master

In days of old and knights were bold... yes, well you won't know just how bold until you've got to grips with the evil Magister and his minions.

Set in the deep, dark sixteenth century, your brother, or sister, depending on which of the characters you choose to play (yes computer games are for girls as well as boys), has been kidnapped and trapped inside one of the towers of the castle, and you have got to get inside there and do the business to effect their release.

Sounds like a doddle, you might think. Well, that's where you're wrong. Before you even get into the castle, there are a couple of puzzles for you to sort out, so you'd better get your thinking cap on before you type "run" and start getting cocky.

Once you've worked out how to get the drawbridge down, not forgetting to have a little snoop around the wizard's hut first, your problems really start to begin. Inside the castle, listen out for cries of help, they may well lead you in the right direction, but be careful not to confuse them with the eerie banshee wailings as you investigate the surroundings.

So, your main task is to rescue your kin, but at the same time, you are also expected to flush out the evil spirits that you meet on the way. They may come in the form of animals or objects, but whichever, you'll know when you come close to one because the castle will start to shake ominously.



Using an advanced form of Incentive's Freescape technique, with solid 3D graphics and animated effects, the end result is extremely atmospheric. There are more than enough commands for you to get to grips with, which allow your character to run, walk, crawl, scan and, very importantly, throw stones. Without these pebbles and a very good sense of direction, you would quite literally be lost – keeping a map is no bad idea.

As you scout around the castle, keep a sharp look out for clues. Picture frames are certainly not all that they seem, and crawling under tables and chairs is more fun that you might think. Clues on the ground floor of the castle are fairly easy to unravel, but as you go further, having a philosopher on hand might help.

Underneath the view screen, there are various displays you need to keep an eye on. Eat as much food as you need to, to keep up your strength, and make sure the spirit level doesn't get too high. If this happens, it's all over and the portcullis descends.

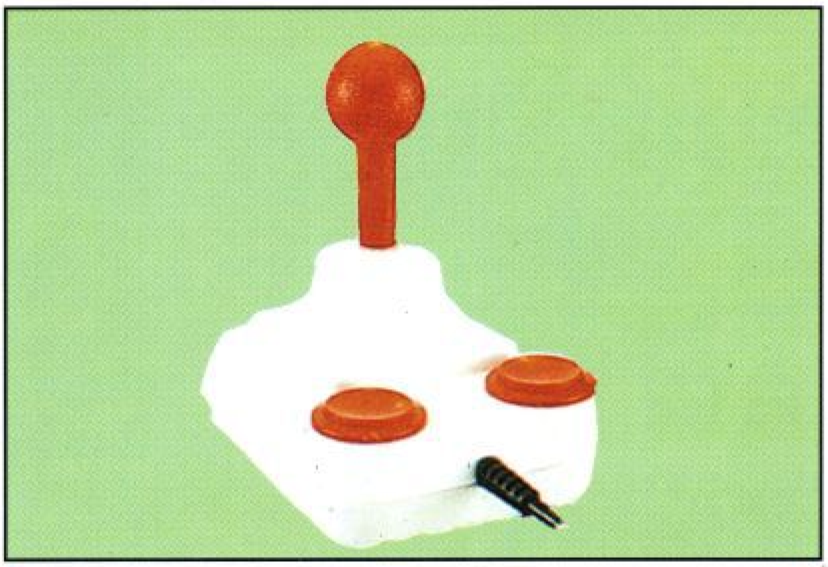
As you make your way towards your partner, picking up treasure and keys to open doors is a must. There are also magic potions which could prove invaluable. All in all, the complete Castle Master package is extremely good value for money, and will be difficult to put down once the drawbridge is up.

Playing the alternative character also gives you another angle at the game once you have mastered it the first time around, that is, if you have the nerve to face the Magister one more time. Are you brave enough to enter the castle? I should, Castle Master has been a long time coming, but it's well worth the wait.

Rupert Dennis

ROUND-UP

NAME	Castle Master		
FROM	Domark	PRICE	Disc:£14.99 Cassette:£9.99
88%	70%	90%	
GRAFFIX	SONIX	PLAYABILITY	VERDICT



Fair Play

Football: It's a tough old game, so you'll need a tough joystick.

It's a funny old game is football. One minute you're over the moon, and the next you're as sick as a parrot. Somewhere in between you've got a game of two halves, and at the end of the day its all about putting more leather, spherical shaped objects into the back of a rectangular shaped thingy with a net on it than the other team. Popular game, though.

What with the World Cup upon us again, it looks like the box is going to be 24 hour sport for the next few weeks, so if you're not into it, you'd better go out and buy a good book instead. Or why not buy some videos, I've heard there's an excellent one about the history of the World Cup in the shops.

Now, I'm not ashamed to say that I do like a bit of the old footie, so when I was asked to put Dynamics' new Competition Pro Goal joystick through its paces, I fairly jumped at the chance.

There are ten different colour combinations to choose from, representing some of the most powerful teams in the world. Being just a tad patriotic, I chose the England colours, though looking at it compared with some of the others, I wish I'd chosen Italy or Brazil.

Settling down with my favourite footie game on the old CPC, I had planned to break the Pro-Goal in gently but, after a few minutes, and two goals down against the opposition, I got rough. Three games later and a winning streak to put me into the play-offs, there was still no smoke issuing from the fire buttons.

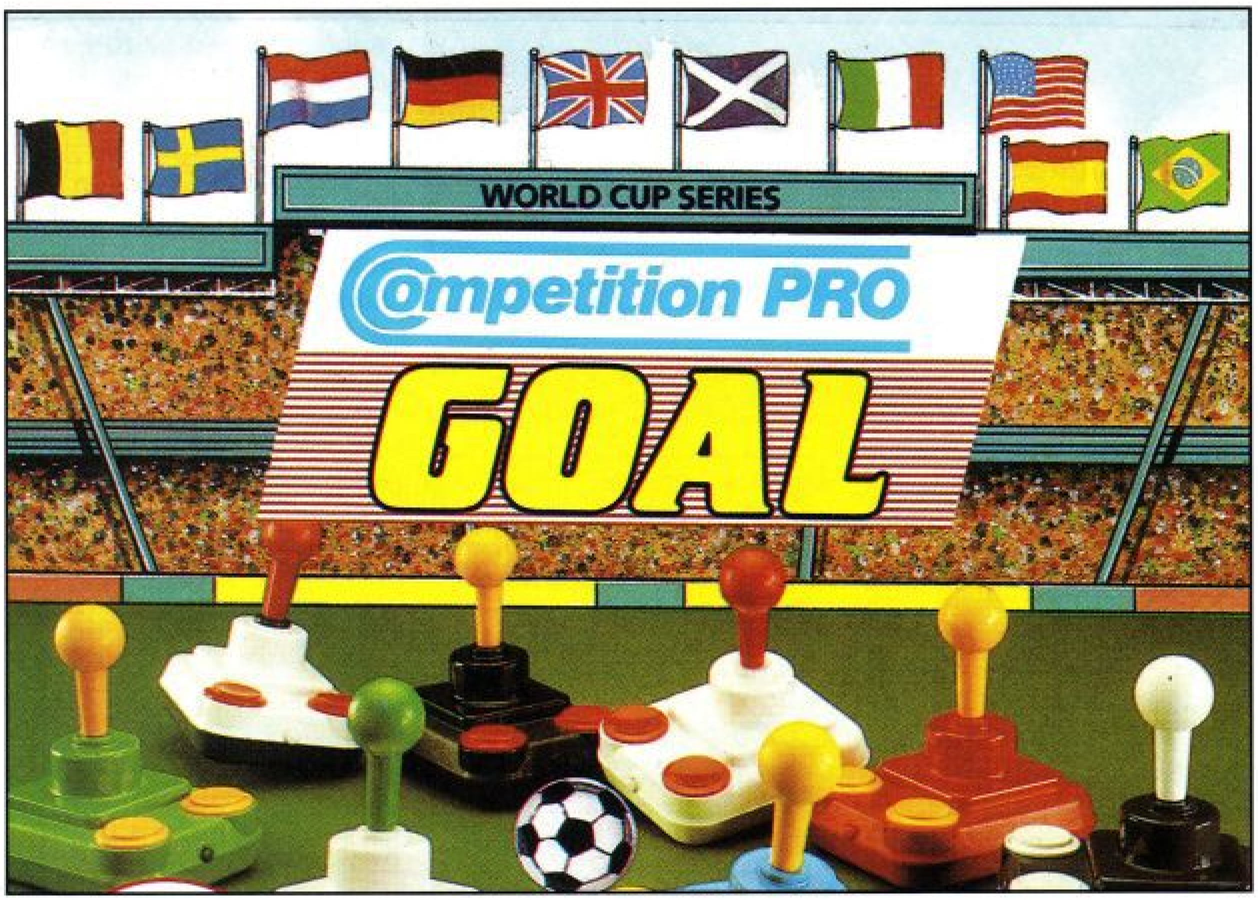
The Pro-Goal is certainly a tough appliance for seasoned game-players. Very compact in shape and size, although a little weighty with it, it is designed with misuse in mind, being able to withstand the frustration if you lose your last life at the most crucial point in the game. however, I wouldn't advise throwing it against the wall too many times.

Although a little stiff to start with, aren't all joysticks, the Pro-Goal soon warms to the task and fits nicely into the hand for a more cosy playing style. Boasting steel shaft, arcade quality microswitches and rubber return, it is certainly sensitive, without being overly stylish in shape. Getting a nice bright colour can make up for that.

Dynamics' have assured us that, if the ten colour combinations are not enough, and a sufficient number of people want to buy one, we can get the colours of any country we like. How about Nepal?

If you are into football, then a Competition Pro-Goal joystick is a must, or if your old joystick is beginning to feel the strain of too many losses of temper, it is certainly good value for money at £14.95. Although the more conservative amongst you may do well to stick to the England colours to avoid dazzle.

With dual firebuttons and non-slip base as the usual extras, Dynamics seems to have wrapped up just about everything into an extremely playable and sellable package so that, even if England, Scotland, Wales or the Republic of Ireland don't make it past the preliminaries, you can take them all the way there in the privacy of your own bedroom.



Competition Pro-Goal Joystick
World Cup Series
Dynamics Marketing Ltd
Tel: 061 6267222
Cost: £14.95

Impossamole

Gallant Monty Mole braves all once more.



Darkness. A chasm of hidden fortunes. A clash of chaotic chemicals and biological creations. A world where the nocturnal creatures stalk the undergrowth and go about their daily business. A day of night is life for only a brave few, brave to face the enigma of night, brave to fight the fearsome creatures of alien nations. A world where only one courageous adventurer, may tread to keep safe this wondrous planet. Monty Mole is Impossamole.

Called upon to save the aliens' planet from almost certain disaster, the hapless star of such epics as Monty on the Run and Auf Weidersehen Monty has donned his red cape and pulled up his tight blue shorts for one more time. Monty's last appearance you may be interested to note, was on ITN when the little ball of fluff poked its nose into Arthur Scargill's miners' strike. Washed and reupholstered, Monty is back for his next adventure to finance his luxurious expense of island life.



With limited sacred super powers, Monty Mole has to leap and jump and jump and leap and leap a little further across over 200 screens which are included in five different environments. The first four, Klondyke, Oriental, Jungle and Ice can be ventured in any order but all must be completed before the fifth environment, Bermuda. The aim is to defeat the guardian of each level in an attempt to retain the sacred scrolls of eternal life. On every platform there is something to be wary of as birds, animals and other infuriating beings block your path and zap your strength if you happen to touch them. As energy is depleted, Monty can pick up food and drink and extra armaments throughout his quest including a somewhat nifty bazooka. The Klondyke level takes Monty through the murky depths and hectic networks of a mine shaft where the hazards are more than just animal. Mine trolleys trundle along the way threatening to quash the tiny toes of our superhero. The other levels are equally adventurous offering the environments that the levels' names suggest, such as lots of trees and grass for the Jungle. The Ice level obviously adorns you with ice whereas the Oriental stage offers you a subtle taste of the east with all its calculated liabilities. The graphics are adequate enough but Monty's movements are a little slow and difficult to control. The screens shift as opposed to scroll but the essence of Impossamole is in its huge challenge, which calls for some quick joystick work and its storyline. It's not everyday aliens beam up a superhero to save their planet. The whole escapade actually reminded me of Indiana Jones and the Last Crusade but that's probably me being a little absent minded. Nevertheless, as a platform and ladders game, Impossamole does not fall flat. It is not the best game in its range but its history and competitiveness herald the game as a sound return to the superhero scene for Monty Mole.

Basil Bread

ROUND-UP			
NAME	Impossamole		
FROM	Gremlin	PRICE	Disc £14.99 Cassette £9.99
72%	70%	79%	
GRAFFIX	SONIX	PLAYABILITY	VERDICT

World Cup Soccer '90

Lace up in time for Italia.

Sweaty palm time again as the tribes take to the pitch for the official World Cup Soccer game, (although being British I think football would have been preferable).

The deluge is upon us as the football games come out of your ears until the mere sound of a whistle sends you for the throat of the nearest person. In the past the football game has seen many an incarnation, but few were a joy to play. Hopefully, the latest batch will have learnt from the many mistakes made but then again you never know. The first football offering to fall under our critical eye is the official offering from Virgin Mastertronic, World Cup Soccer – Italia '90. The emphasis is on fun and a smattering of reality.

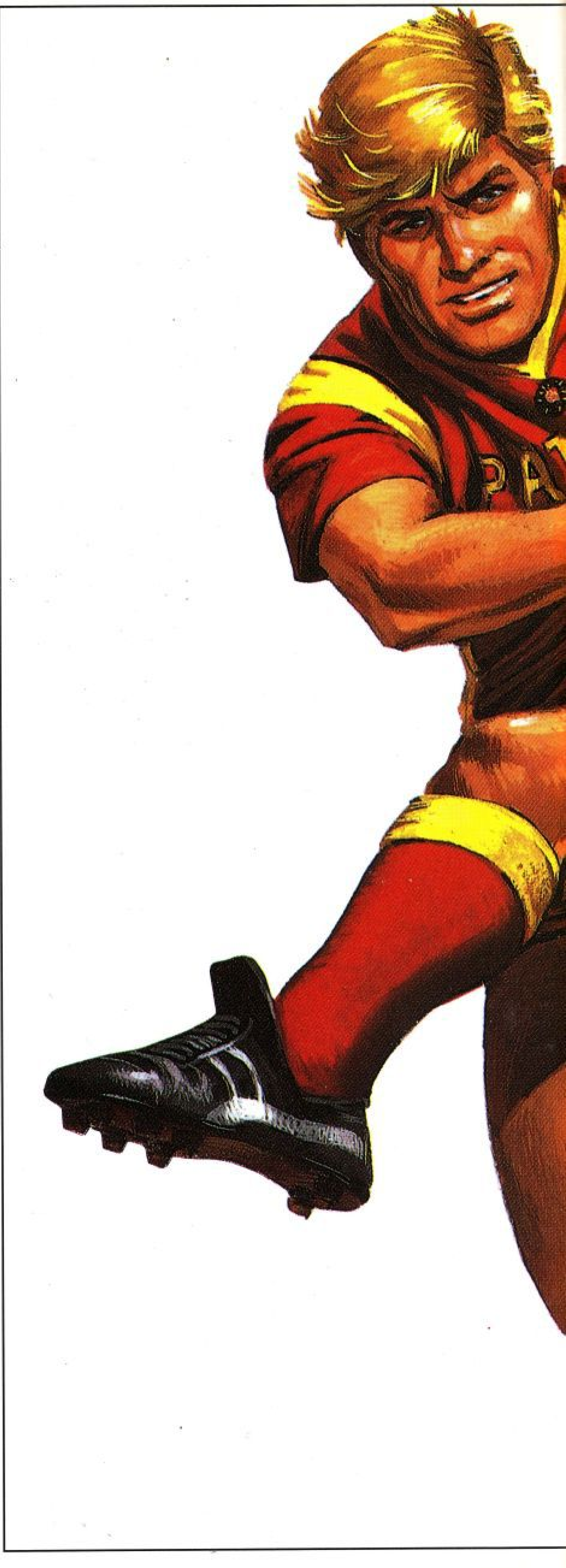
There is no management side to the game, you pick your country (Spain, England, Italy or Belgium) and away you go. The first of your qualifying matches is against the good old U.S. of A.. You view the pitch from above but the players are angled so you can see their full torsos (not very kinky when done in pixels). You always have the kickoff and start going up the pitch. Come to think of it you end the game going up the pitch as well as there is no half time, just a four minute match limit, unless it is a draw then the first player to score wins the game.

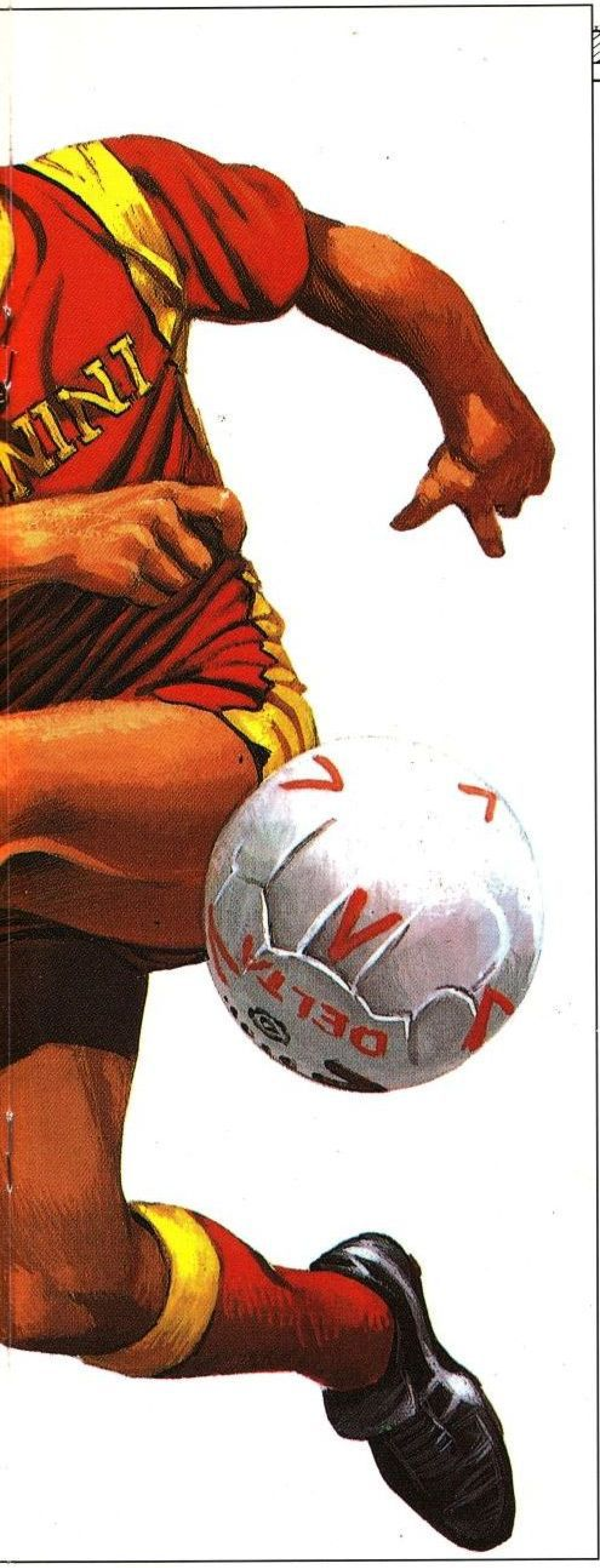
Charging around the pitch with little regard for life or opposing players' limbs will see the ref waving the red card and your player will be invited to leave the field. It is however often a good tactical move to bring down an opposing player when approaching the box and a clean shot ahead of them.

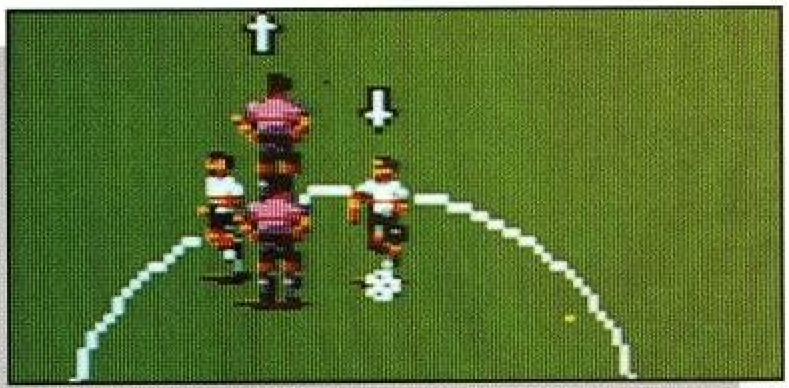


When a player reaches the inner area of the penalty box the perspective changes to a forward view of the goal. You have a limited amount of time to make your shot as you and goalie weave from side to side seeking that elusive opening. Sometimes a shot looks as though it has missed but goes in, this is balanced by the shots that go in but miss. When controlling the goalie you will find him remarkably nimble, often making several dives to save one shot.

The battle for control of the midfield is often a bloody







affair (the offender usually being the human controlled player) and sometimes frustrating. You control the player with the arrow above his head and to change players you hit the fire button. The frustration occurs when the player you wish to control refuses to respond and you end up with an arrow above every player except the one you want. There are no sliding tackles but you can kick your opponent firmly in the shin. Corner kicks and throw-ins are implemented but the ball is always thrown or kicked to the player with the arrow above his head so it is easy to intercept the computer shots.

After the two preliminary rounds against the U.S.A., and Japan you will face Mexico, the USSR and West Germany in the first, second and third preliminary rounds and then Argentina in the quarter finals. The teams do become more skillful as the game progresses with players becoming harder to tackle and goal keepers harder to beat. After Argentina come Holland and then in the final you face the once fabled Brazil. Beat this final team and win the cup and you find yourself back in the qualifying rounds without a cup presentation, shock horror.

If you have a friend who is handy with a keyboard, two player games are possible and if this two player game does come to blows make sure you are the one with the joystick, (a joystick makes quite a handy ball and chain if you stick a few nails through the handle).

Sound effects are minimal, the crowds only cheer at the end of the match and the players don't even scream as you hack off their legs – the only accompaniment to a grievous foul is the toot of the referee's whistle. And of course a rather dull thud when the ball is kicked.

Despite the many departures from reality or perhaps because of them, this is a very playable game. Two players mode may cause the odd squabble as you fight over which direction you wish to play (there is no changing over at half time, there is no half time). Let's hope the many football games to follow achieve such standards of playability.

Adrian Pumphrey

ROUND-UP

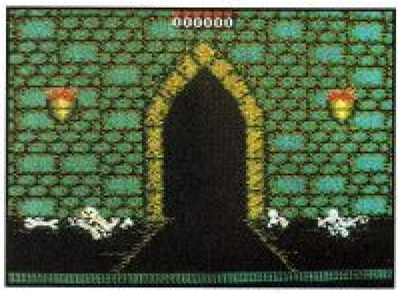
NAME	World Cup Soccer '90		
FROM	Virgin Mastertronic	PRICE	Disc £14,99 Cassette £9,99
78%	32%	86%	
GRAFFIX	SONIX	PLAYABILITY	VERDICT

Budget Basement

Feast your eyes on another selection of budget goodies.

DRAGONS LAIR

You will need to be extremely deft with your joystick controls to catch Singe the dragon off his guard in this mega budget release from Elite. From the outset, as you jump between ramps and take slices out of the 'giddy goons', this is an adventure with a difference.

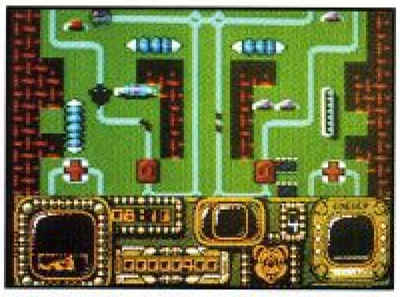


There are nine levels of nail-biting excitement which you need to overcome before you come face to face with the evil dragon, in your quest to save the beautiful Princess Daphne. Graphics are excellent and there is also a nice little tune to keep up your morale. The only drawback is in the multiload sequence, which will keep you rewinding to square one whenever you get singed too often. Apart from that, reuniting Princess Daphne with her beloved Dirk the Daring is an experience not to be missed.

MICRO MOUSE

This is a neat budget offering from Mastertronic. Instead of wasting human resources on repairing circuit boards, the powers that be have designed a nifty solder robot with a cyber brain to undertake all of the hard labour. First of all though, these robots have to be trained, and that's where you come in.

As a solder robot trainer you have to guide the brain, in the form of a mouse,



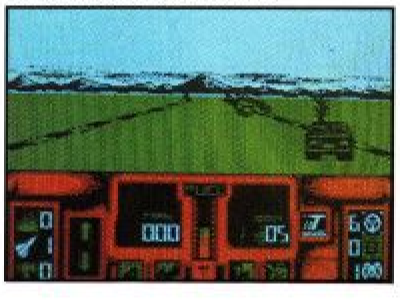
around a printed circuit board, repairing breaks in the wiring as you go, to allow the robot to get used to the procedures. To make matters worse, there is the usual host of bugaboos, whose sole aim is to make your day just that little bit more problematic by breaking wires and sapping your energy.

Use the red cross stations to pick up solder and repair the board within the set time and you're laughing. If not, you're mouse dies-tough cheese.

OVERLANDER

Put on your driving gloves and get ready to speed off into the sunset in the ecologically unkind world of the Overlanders. In the year 2025, the ozone layer has finally collapsed, forcing people underground and leaving the surface of the planet to the baddies.

Your task is to ferry goods and documents overland between the subterranean cities, and its not easy. As a driving game, Overlander is a so-so offering, but redemption comes in the form of the goodies you can buy to make your customised car bigger, faster and meaner.



The distance between each city varies, so be careful not to waste money on fuel, and if you decide to carry illegal substances for the Crimelords, be careful – the surface dwellers will be even more eager to knock you off the road to grab your cargo from your pre-apocolyptic machine.

For those of you who like a driving game with a difference, there is more than enough here to keep you happy.



FANTASY WORLD DIZZY

Yes, Dizzy's at it again as he braves the wrath of the evil king's trolls in his latest attempt to rescue Daisy.

All of Dizzy's friends are out and about in fantasy world, including Denzil, Dylan, Dozy and Grand Dizzy, so make sure you use the help they can give you because this is one tough adventure.

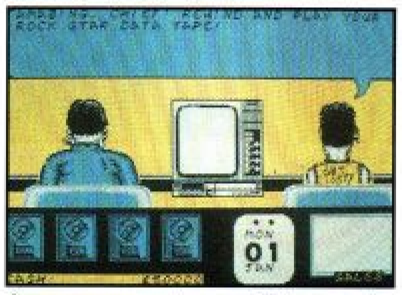
There are over 50 rooms to roll or trudge through and more than enough baddies trying to thwart your quest, such as the evil looking Armorog. To help you on your way, the troll in the opening dungeon will give you a clue, but for a price. Pick up as many items as you can, you never know when you are going to need them, and stay clear of the water and flames unless you want to end up as a fried egg!

Fantasy World Dizzy has all of the fun and excitement of its predecessors, a happy melody to help you on your way and is extremely playable, despite the familiarity of the plot.

ROCK STAR

With £50,000 in your pocket and a slightly less than helpful assistant, it's time for you to hit the big time as rock star manager extraordinaire.

There are over 50 stars to choose from, ranging from the mega-famous to the seedy old cronies, so spend your money wisely as you get set to rocket them into the charts. Careful management and good publicity will bring you excellent dividends



from concerts, and its up to you to decide which record deal to go for.

You will have to bear with the wonderful CPC sonix as your group gets into the recording studio, but its all worth it as you shoot into the charts to win those all important platinum discs.

Rock Star will keep you busy for hours. Who cares if your band can't sing? Look after them well, keep them away from orgies and plane crashes, entertain the fans and they'll go a long way.

Chris Knight

ROUND-UP

NAME	SUPPLIER	PRICE	RATING
Dragon's Lair	Elite	£2.99	82%
Micro Mouse	Mastertronic	£2.99	69%
Overlander	Elite	£2.99	78%
Fantasy World Dizzy	Code Masters	£2.99	86%
Rock star ate my hamster	Code Masters	£2.99	76%

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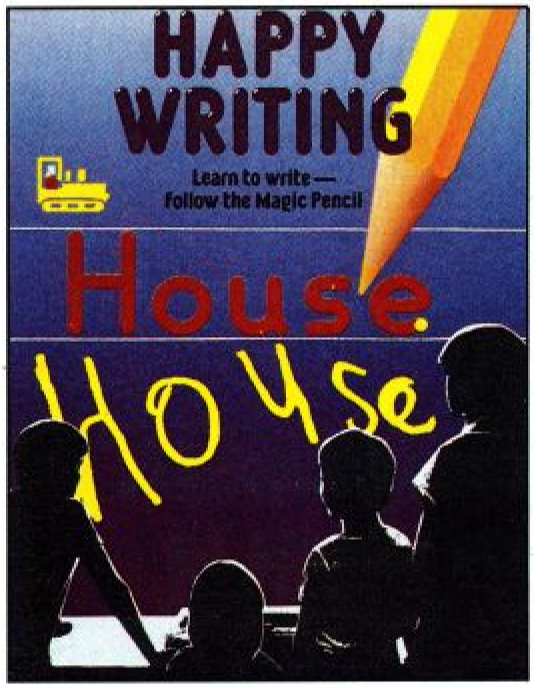
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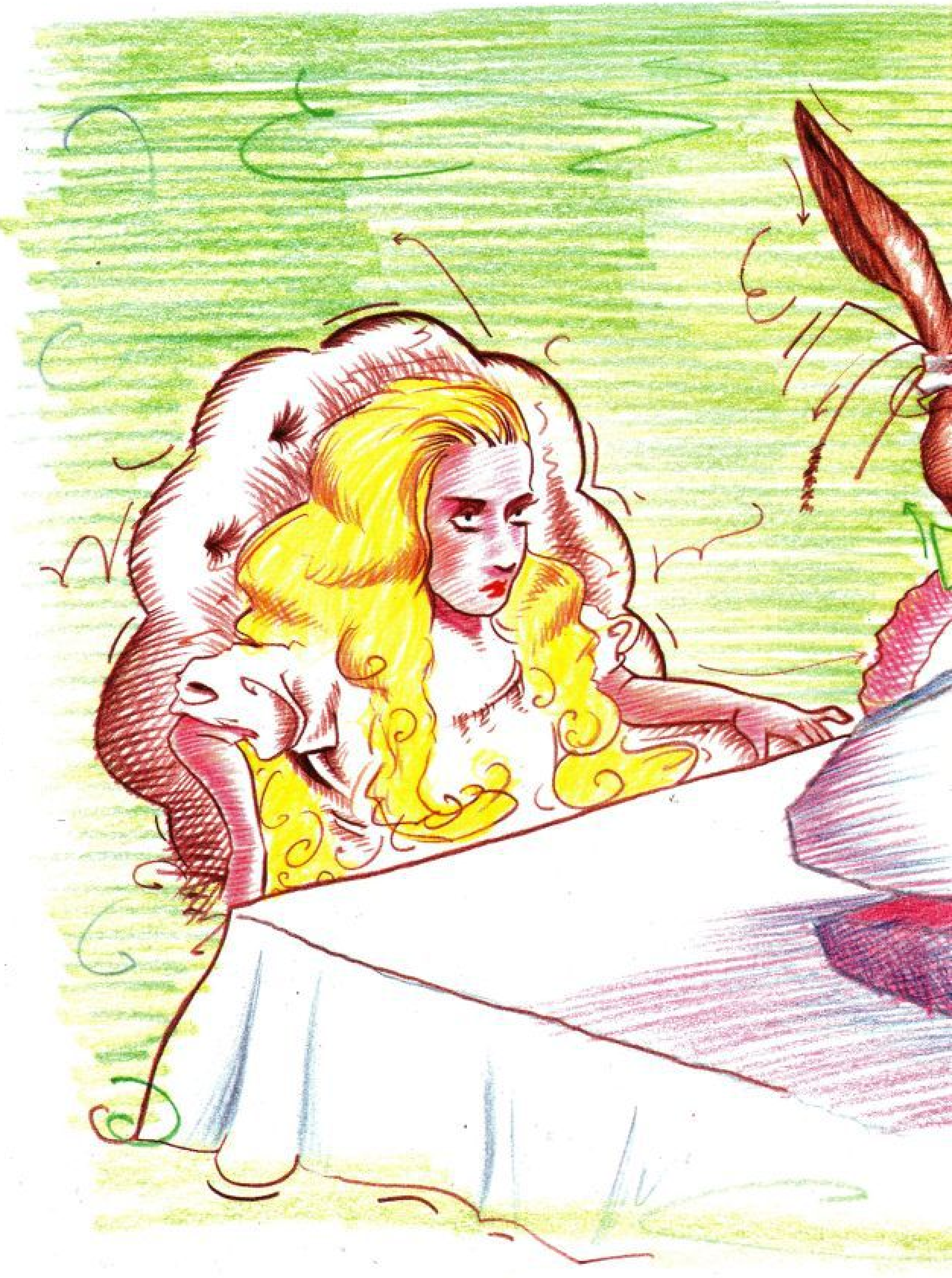
Reasons to be cheerful

This month Dr. Dorn puts the 'L' plates on Bourne Educational Software

B.E.S. produce a wide range of programs to suit virtually all age ranges from pre-school children to a range for adults in some fairly esoteric areas of the business world. Representative of the range for children aged 11 years and under are the 'Happy' series (Happy Numbers, Happy Letters, Happy Writing, etc.), which is primarily aimed at the 3 to 6 years range.

The programs are exceptionally easy for a child to use, involving only two keys in the early stages - <ENTER> and <SPACE> - which even the most inadept child ought to be able to find with little difficulty. In essence, the early part of the series is concerned with matching of what will, to the very young





child, be shapes. As experience grows, the child will begin to recognise these shapes as either letters or numbers, and is gradually progressed away from the 'SNAP' approach into a conscious matching activity.

Graphics are bold and simple with adequate reward messages, and are appealing to children in this age range. Rewards are based around a large 'happy face' - the kind you see on badges everywhere, and which teachers the world over use as a symbol of recognition and approval on children's work (at least I did!). In the first instance, the face is neither happy nor sad. As a number or letter is printed to the screen, there is nothing for the child to do, but once the graphic has fully developed,



Happy Numbers.

an audible signal cues the user to make the match.

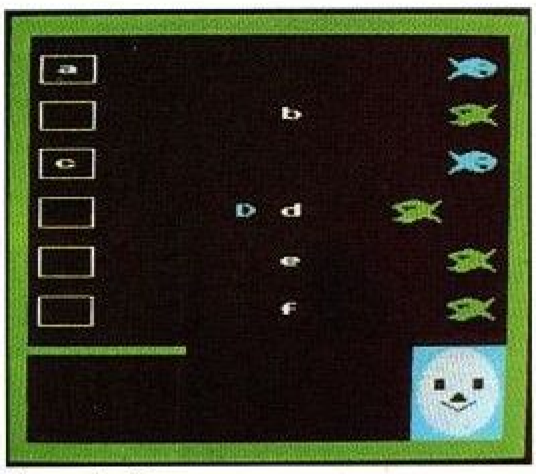
This is where a cunning piece of strategy, of which I wholly approve, comes into play. Only the right keypress has any effect - essentially, if the number '9' is displayed onscreen, then every key on the keyboard, other than the number '9' is effectively disabled. The upshot is that the child cannot fail to recognise the key on the keyboard. S/he must then press that key the same number of times as its value - in our example, nine times. Each keypress draws a flower onscreen, and when the child is satisfied that s/he has the right number, a dab at enter asks the CPC's opinion.

If it's right, the reward is the face smiling, and a jolly little tune being played - kids actually like it, even if it isn't exactly Kylie Minogue's latest hit (reasons to be cheerful!!) The downside for an incorrect entry is a teaching passage.

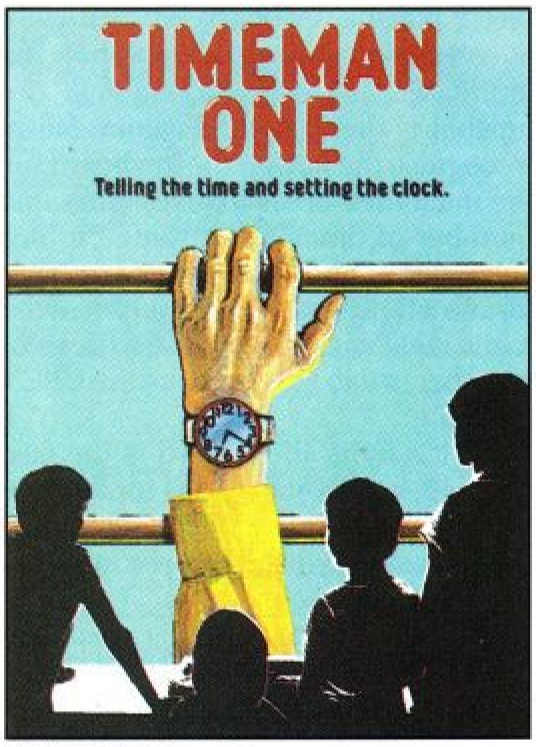
This involves the face adopting a pout, and the flowers turning to white - and the young user usually mimics the face in disappointment. Thereafter, the correct number of flowers is displayed in such a way that the child can consolidate the correct meaning of the '9' or whatever, in terms of how many it represents. Again, this is something that is much more valuable than a 'raspberry' and a 'try again' message, especially to such young children.



The 'Happy' series then, represents an attractively produced and useful tool for the pre-school child. The fact that it can be configured by adults to reflect areas which are in need of re- inforcement for the child is another plus. My two local testers are, erm, a fair way beyond this stage in their academic careers now, but my own child used the programs pre-school, and never ceased to be fascinated by them. They're ideal for that age range, and not too badly priced - you may be able to pick them up very cheaply, as I've seen the cassette versions being sold for less than 100 pennies. Worth a few bob if you've very young children.



Happy Letters



Telling the time.

Time will Tell

Moving up the ladder in age range in the BES catalogue, we come to the Timeman series, which is probably the best effort I've seen in computer assisted learning of how to tell the time. In my experience, it's almost never too soon to put this program in front of a child, and, in fact, I've used it with some very much older students who had severe difficulties in getting to grips with analogue watch faces - a product of the digital watch boom, methinks!

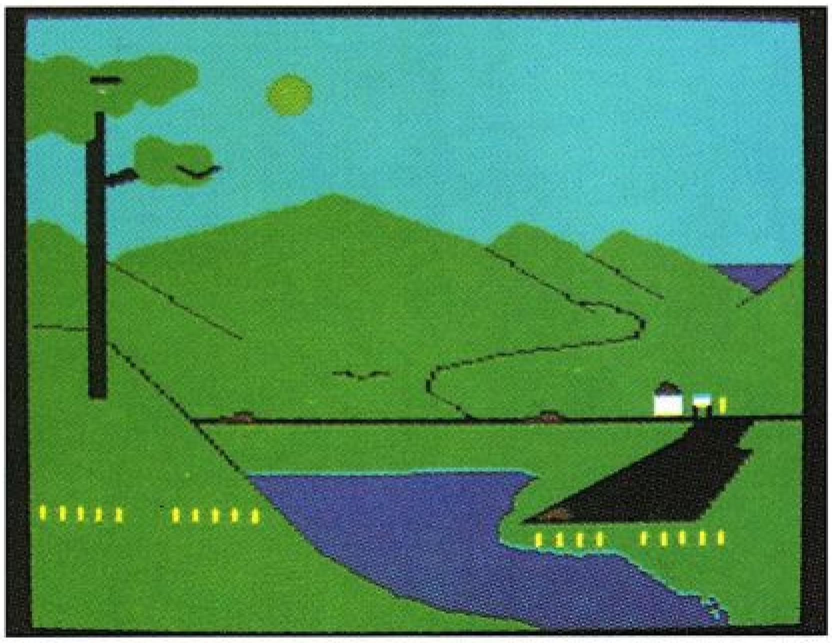
The two programs in the series are Timeman 1 and 2, each of which covers from simple to more difficult aspects of a process which , as adults, we tend to take for granted - why do we say 25 to 5 instead of 35 past 4, for instance. Teaching is based on the quadrant approach, and there are a multitude of different ways of treating it used. As in the Happy series, rewards are well placed and adequate, and children seem to derive a large amount of satisfaction from the correct completion of tasks. The feel of each program is very similar to the 'Happy' series, so in depth analysis is inappropriate here. Suffice it to say that I have yet to come across a more comprehensive treatment of the teaching of this area than is presented here.

FishHawks

Again, in the junior range, we have OSPREY from BES. Now, this is an educational package that seems, at first, to have very little to justify its 'educational' title. It doesn't deal with the three 'r's, has nothing to do with drawing, or music or any other part of the curriculum, other than a link into the ecology of our planet with particular reference to the growth (or otherwise) of Ospreys north of the border. Now, that may seem to you to be a pretty thin excuse for the production of a piece of educational software, but I have to say that I've seen more solid work produced in schools as a result of this program being used than has been the case with many others I could mention.

The package is not merely a computer program, but also includes some very detailed documentation on the subject of Ospreys in particular, and conservation in general, beautifully illustrated, and sourced, in part, by the RSPB. This, in itself, has prompted some very long and interesting discussions with my two local testers (my daughter Suzanne and her good friend Andrew Sinclair, who was desperately hoping I'd mention his name!), and has also influenced them both to look further for material on the birds.

More than that, actually playing the game had them both involved in long and meaningful conversations as to how best to combat the perils that beset Ospreys, and beat the results of the RSPB in conserving their numbers. That is the aim of the game, and it seems to me that some very heavy research has gone into the programming and concept of it. In essence, all the child has to do is allocate a resource of wardens to three simple tasks - preventing egg stealing, publicity, and tending to the reserves.



Saving the birds.

If the balance is right (or nearly so) then Osprey numbers may be on the increase. If it isn't, the population can be wiped out. The results of Suzanne and Andrew's deliberations, once entered into the program (very simply, I might add) are illustrated by very simple graphics and sound, where egg stealers attempt to climb a tree to get to the nest. If there are enough wardens allocated to prevent it, they're chased away. If not, an egg (or more) is lost. Cars either approach and watch the scene in peace, or they come too close to the nest and beep their horns, frightening the birds away, and so forth. To adults, this isn't particularly enthralling, but to the kids, who may have spent, in some cases, fifteen minutes deciding what to do, every detail is worthy of scrutiny. Many have been the cheers and groans as plans have either worked or failed, and many times, we've had to physically lift the two youngsters away from the computers to eat, go to bed, or whatever.

Now, I'm not particularly 'Green' - at least I don't have an obsession with the term and its implied lifestyle, but even being totally cynical about life, I've got to say that there is no doubt that children's logic processes and thought patterns can only be enhanced by this program and its associated documentation. It is far from content free, and, onscreen, lacks the finer points of graphic art and sound. Yet even so, I'd be more than happy to see every child under the age of eleven have a copy of this excellent package. Highly recommended.

Whoops! Space has, it seems, run out on me yet again, and I haven't even finished with the BES programs. Suffice it to say that each of Bourne's programs has been tried and tested in schools, and each one lives up to the kind of description you've read in this article. I've got no qualms about advising you to check out the whole series.

David Dorn.

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Extra Ability

Dr. Dom proves words are greater than deeds and asks for a little help from his friends



No silliness this month, but straight in with a plea from a disabled CPC user. From Steve Symmonds comes the following:

'I am a physically handicapped person and I use an Amstrad computer (specially adapted) and Amslink word processor to communicate, because I have limited speech. I have an idea for a program which I think could interest you and would be of use to other people like me.

I would find it very useful to have a sort of dictionary of phrases and common complete sentences linked to a voice synthesiser. There are separate units which do this, but I would find it useful to be able to work through my existing computer, and to be able to 'talk' the words and phrases I already have stored in there.

Is there such a program already in existence? Or do you know of any keen programmer (amateur or professional) who might be interested in writing such a program for disabled people?'

Well, the basics are already in existence, and have been for a while. The SSA1 speech synthesiser has often been mentioned in this column, and is still available from many sources. There is also a program called 'SPEECH' which is a software speech synthesis program, available from Swift Software. Either of these will take care of the matter of the CPC talking, but the control program may be another matter.

Using either unit, it ought to be relatively simple to set up a database such as you describe in a simple BASIC program, and have the right string sent to the synthesiser on a particular keypress, or string input.

So, the form might be something like this:

10 REM set up speech synthesis unit or program here . . . . . . 100 a$="" 110 input in$ 120 if in$="" goto 110 130 let a$=upper$(in$) 140 if a$="HI" then goto 1000 150 if a$+"BYE" then goto 1010 . . . . etc.. . . . 1000 |SAY "Hello, how nice to see you, how are you?" 1010 |SAY "It's been nice seeing you, see you again soon"

It's not difficult to get a simple program up and running in that sort of vein (and by the way, that's only an example, so please, no major criticism of the code - it's just for inspiration, folks!), but the more phrases, words, and sentences you have stored in it, the longer it will take for any one of them to be spoken by the synthesiser.

So, I'm sure that there will be a vast number of competent programmers out there, maybe some that have been following AJ's excellent programming series. Can you help with a machine code utility such as Steve describes? If so, get in touch via the usual addresses, and I'll put you in touch with Steve, and also make sure that your program is published in the mag. I'm also pretty sure that Chris, our illustrious Editor, will find a few goodies that can be sent your way.

Now, to the question of dumps from various different applications onto a wide variety of printers, 24 pin and Colour printers being the case in point. I've been very pleased to see one of our advertisers reads this column, and is advertising a utility to handle precisely the dilemma we've had with the Star LC10 colour printer. MJC are the company, and the product is called Colourdump 2. Costing the princely sum of £12.95, the utility (which is available exclusively from MJC, by the way) will, I'm told, take a standard

screen file from Advance Art Studio, or AMX Art, and produce full colour dumps on the Star.

It also handles all Epson compatibles (it says here), and can be used with them with coloured ribbons. Now, I haven't seen the package yet myself (hint!!), but I DID see its precursor. This did work with Epson type machines (the DMP range included) and, using primary coloured ribbons, a passable coloured dump was eminently possible. I'll report back when the new version has passed through my sticky hands, and a few dumps have passed through it!

On the same subject, my mate Brian, from Goldmark Systems (0707 - 271 529) sent me a letter earlier in the month. He says 'I've just been reading your advice to Mr. Wilbert George of Swansea regarding a screen dump for his Seikosha printer.

I could, of course, be completely wrong, but I think you have fallen over the most important clue whilst playing Sherlock, and that is the reference to the uni-hammer printhead. This would make it similar to the Amstrad DMP1, which is a badged GP100A.

This leaves the possibility that our Screen Dump Utility will work with Mr. George's printer.'

Brian also sent me a copy of the utility, which, I've got to say, is a doddle to use, and turns out some excellent results. It not only works with the bog standard Epson types of printer, but, according to Brian, also supports the DMP1, Shinwa types, and even the CITOH M8510+ (not the most popular or normal of printers, I might add). It will also give, Brian says, a perfect dump on the LC24-10, by switching it to IBM mode, and selecting the Epson dump. Any 24 pin printer that supports n/216 line feeds triggered by ESC3 will also work in this mode - that includes most of the Star 24 pins, and some of the NEC range. I can't speak for any others, unfortunately.

Brian also sent me a copy of his Label maker utility, which is so easy to use that my daughter has made all kinds of labels for her walls, and challenges her friends to read the flip side section standing on their heads! Seriously, though, it's a very useful piece of kit if you, like me, like to keep track of what's on your 3" discs, and also prefer to have your very own 'designer' labels.

Finally for this month, a letter from Tony Gibbs, with a couple of queries. He writes:

' In the May issue of ACU, in the letters page, Matthew Furber said that on typing:

POKE &A701,229

all files that had been |ERAsed from a disc could be accessed in USER 229. I have already transferred one full disc of small BASIC programs to user 229, and they seem to work perfectly.

Please could you explain why this weird system works, and if it is always going to be possible to '....store everything on one disc!' and will the programs that are kept there always be safe?'

Hmm.... When a file is |ERAsed from a disc, what actually happens is that its directory entry is amended to place it into USER 229, as distinct from the default user number of 0. If you have a glance at your manual, under the CP/M section, you'll see that there are fifteen USER areas that are accessible under the OS, and which you may switch between with the USER n command in CP/M. Obviously, USER 229 falls outside the scope of fifteen areas (think of them as directories under MS-DOS if that helps - see back issues where Rodos is discussed for further info), so, when a program or file is erased, it isn't actually physically 'rubbed out', it still exists, but in a user area that you can't normally get to.

All the poke does is to make the area available to you, and thus the files as well. Now, there are those folks who advocate this as a method of making what they regard as secure backups. After all, if a file is already erased, you can't overwrite it, right? Wrong! Precisely because it falls outside the normal default USER range, it CAN be overwritten.



If you want to test this out, Tony, fill a disc with unimportant files, and |ERAse them. Do your poke, and load a few, just to check they're still there. Disc's full, right? Ok, save a completely different file onto your disc - one that isn't already there. Do a CAT first. Disc's empty, right? Correct! Save the file, and there's still loadsa room for more, and your 'secure' backups are well and truly kna:. err, unusable. So, no, your programs that are stored there are far from safe. If you want to make a backup (a highly praiseworthy pastime, I have to say) then do it the proper way. Use THREE discs, in a Grandfather, Father, Son rotation - the standard method. It's the only safe way to do it. The poke is purely and simply a way for resurrecting files that have been erased in error - use it for nothing else at all.

Tony also adds a PS. I have to persuade his mother that Brunword 6128 is ten times better than Mini Office II, and that if she gets it, it will solve all of her problems. OK.

Dear Tony's Mum. Hi. I'm David Dorn, the Applications Advice Columnist in ACU (but then you already know that, don't you!). Your son tells me that you're still using Mini Office II, and I gather you're having difficulties with it. I can't say I'm surprised. MOII is a great set of programs, but none of them will ever beat standalone programs for power, speed, or versatility. Don't get me wrong, I'm not knocking it, but, let's face it, there are better word processors around than the one in that package.

One such is Peter Brunning's Brunword 6128, which is, without doubt in my mind, the most powerful and friendly word processor available on the 6128 today, with the possible exception of....Brunword Elite! Might I suggest you peruse Peter's adverts, and compare its facilities with those you already have. If Tony's implied comments as to your difficulties are anything to judge by, I think you'll have many fewer problems with Peter's excellent product.

Your's sincerely, lotsa hugs'n'kisses
David Dorn

That alright, Tony? Yes? Fine, the bill's in the post!

That's it for this month, folks. If you keep sending the letters in, I'll keep answering them, so don't be shy! Tara!!

Hacker's Paradise

This month Hairy lists a handy little aid for would be hackers

Halloo hackfans. Back again, oh frabjulous joy. There've been a few changes at the Hackery since last time: We've got a new address to send all your wonderful goodies to now, so look in the front of the mag. for details. The not-so-wonderful stuff can still go to the old address though.

Rumours of the move being because I needed a nice office with comfortable, padded walls are totally unfounded. Me? Sane? Of course I'm sane. Ha! I'm as sane as a gooseberry.

Enough of me, let's see what the postie has brought up in the mailbag. Sounds messy dunnit? Not that bad though, especially this pokeroonie from Chris Underwood of Worle. He has a slightly more obtuse way of getting infinite lives from New Zealand Story. You press caps lock, and then slowly type FLUFFY. You have to do it slowly, or it won't work. When it does work, not only do you get the infinite lives, but hitting return jumps you up to the next level.

Let's see what else there is in the mailbag. It's very cold in there. Bit damp too. Ah! That's where the bacon butty went. What's this stuck to the other side of it? Ah, a list of useful pieces of information from Tom Kennedy in Kirtlington. Useful hints like: If, on Mission Genocide level 1, you move back a few sprite lengths and push the space bar for auto-fire, you will survive without doing anything for approx 37.8 secs. I think I preferred the butty.

Here's a good bug though, it's in Karl's Treasure Hunt, on Software Project's 4-pack compilation: From the start, go to the screen to your right, climb up past the rubic cubes etc. to the lair at the top left corner. Now jump left and you will find yourself in the wall of the first screen. Now jump up and something wierd and wonderfool will happen!



They get sillier too, like this one in California Games BMX: Tap right a couple of times at the start, then quickly push up, and keep it there. In a few seconds, your head will disappear into your body, and you'll fly on well above the track.

I liked the bit in Gauntlet (the Defender clone) where he says to shoot all the little fellows that the aliens nick from down the bottom of the screen, and WHAM! Landscape disappears, 'orrible purple greeblies materialise, and boy are they really angry.

By the way Tom, from the looks of your typing, you need your index and middle fingers transplanted. This doesn't stop us from sending you a wee something though.

And next, out of a particularly old mailbag, from Niall Brady of Sligo in Ireland, we have a Disc Search Facility called discfind. This is one of those cunning pieces of code that hackers the likes of me use to find names, passwords, and silly messages on discs. Now, you can do it too, and don't forget to tell me what you find in there!

First of all though, you have to type in the following load of code. Don't worry too much about pinkie crossover, as it is checksummed to the gills. To use the beast, run the program (after saving it!), type |HEX or |ASC followed by these parameters:

|HEX,start search on track,end search on track,start on sector

|ASC,start search on track,end search on track,start on sector

You will then be asked for a string of BYTES in hex or ascii, and off it goes. By the way, it also knows about cunning disc formats, so there is no hiding, unless the messages are actually encrypted.

So as you can see what you're doing,and stop what you're doing too, pressing ESC pauses discfind, and pressing ESC twice stops it permanently. Well, here's the code:

```
1 ' DISCFIND by Niall Brady
2 ' For all naughty hackers
3 ' and VAX too............
4 '
10 DATA 21,36,92,01,09,90,C3
20 DATA D1,BC,11,90,C3,34,90
30 DATA C3,18,90,48,45,D8,41
```

```
40 DATA 53,C3,00,CD,91,91,21
50 DATA 06,92,CD,7B,91,CD,B5
60 DATA 91,C8,FE,0D,28,50,FE
70 DATA 7F,30,F4,77,23,CD,5A
80 DATA BB,18,ED,CD,91,91,21
90 DATA FA,91,CD,7B,91,CD,59
100 DATA 90,38,02,D6,07,CD,8C
110 DATA 91,47,CD,59,90,38,02
120 DATA D6,07,80,77,23,3E,2C
130 DATA CD,5A,BB,18,E4,CD,B5
140 DATA 91,CA,C6,91,FE,0D,28
150 DATA 15,FE,61,D4,89,91,FE
160 DATA 47,30,ED,FE,30,38,E9
170 DATA CD,5A,BB,D6,30,FE,0A
180 DATA C9,D1,3E,0D,77,E5,21
190 DATA C8,91,CD,7B,91,E1,11
200 DATA 3A,92,ED,52,7D,32,33
210 DATA 92,CD,45,91,3A,33,92
220 DATA 47,11,3A,92,7C,FE,83
230 DATA 30,F1,1A,4E,B9,28,03
240 DATA 23,18,F3,23,13,1A,FE
250 DATA 0D,28,06,4E,B9,20,E1
260 DATA 18,F3,E5,21,15,92,CD
270 DATA 7B,91,CD,78,BB,E5,26
280 DATA 08,CD,75,BB,3A,2F,92
290 DATA CD,2C,91,E1,26,13,CD
300 DATA 75,BB,3A,31,92,3D,CD
310 DATA 2C,91,E1,E5,16,00,3A
320 DATA 33,92,5F,ED,52,EB,D5
330 DATA CD,0E,91,06,0E,CD,18
340 DATA 91,CD,0E,91,D1,06,0E
350 DATA 1A,13,FE,20,38,11,CD
360 DATA 5A,BB,10,F5,CD,1B,BB
370 DATA FE,FC,CC,C1,91,E1,C3
380 DATA 90,90,D5,C5,CD,5D,BB
390 DATA C1,D1,18,E9,3E,20,CD
400 DATA 5A,BB,3E,20,C3,5A,BB
410 DATA 1A,13,C5,CD,2C,91,CD
420 DATA 13,91,C1,10,F4,C9,CD
430 DATA 78,BB,22,2B,92,C9,06
440 DATA 02,4F,CD,8C,91,E6,0F
450 DATA FE,0A,30,04,C6,30,18
460 DATA 02,C6,37,CD,5A,BB,79
470 DATA 10,EE,C9,CD,1B,BB,FE
480 DATA FC,CC,C1,91,21,00,80
490 DATA 3A,2F,92,57,3A,31,92
500 DATA 4F,1E,00,DF,28,92,30
510 DATA 06,79,3C,32,31,92,C9
520 DATA 3A,2F,92,3C,32,2F,92
530 DATA 47,3A,30,92,90,FA,C6
540 DATA 91,3A,32,92,32,31,92
550 DATA C9,7E,23,B7,28,05,CD
560 DATA 5A,BB,18,F6,21,3A,92
570 DATA C9,EE,20,C9,07,07,07
580 DATA 07,C9,FE,03,20,31,DD
590 DATA 7E,04,32,2F,92,DD,7E
600 DATA 02,32,30,92,DD,7E,00
610 DATA 32,31,92,32,32,92,3E
620 DATA FF,32,78,BE,3E,01,32
630 DATA 66,BE,C9,CD,81,BB,CD
640 DATA 06,BB,CD,84,BB,FE,FC
650 DATA C9,CD,B5,91,C0,E1,E1
660 DATA C9,04,02,18,20,44,49
670 DATA 53,43,46,49,4E,44,20
680 DATA 76,31,2E,30,20,2D,20
690 DATA 4E,2E,42,72,61,64,79
700 DATA 20,28,63,29,20,31,39
710 DATA 38,38,20,66,6F,72,20
720 DATA 56,41,58,20,18,0D,0A
730 DATA 0A,00,45,6E,74,65,72
740 DATA 20,48,65,78,3A,20,00
750 DATA 45,6E,74,65,72,20,53
760 DATA 74,72,69,6E,67,3A,20
770 DATA 00,54,72,61,63,6B,3A
780 DATA 26,09,09,20,53,65,63
790 DATA 74,6F,72,3A,26,00,3C
800 DATA C0,07,00,00,00,00,00
820 DATA NCB
830 '
840 MODE 2:chk = 0: x= & 9000:
MEMORY & 7FFF
850 READ a$:IF a$="NCB" THEN
870 ELSE a=VAL("&"+a$)
860 POKE x,a:x=x+1:chk=chk+a :
  GOTO 850
870 IF chk<>62267 THEN PRINT
"DATA ERROR.":END
880 CALL &9000
```

Thanks a bundle, Niall, and we'll send some encouragement on the way.

Alas, I must go now: I've a wife and two children to look after. All the crying, whining, and bad behaviour - and the kids make quite a fuss too! Until next month, just remember: You folks contribute to the rich tapestry of life, and I'll darn all the bits together.

Luv 'n' Stuff,
Vax, Suz, Kate & Tammy

Transfers and Protocols.

A touch of troughing with gallant Gordon Bates.

After all the emphasis we've placed on Focal point lately, I thought it was about time we started taking a look at some wider issues - and also covered some of the topics I've promised.

To this end, I propose to examine file transfers (troughing, to the initiated), and some of the protocols available to the masses who are into (and getting into) CPC comms.

Firstly, I'm grateful to the many people who have written to my bruvver and our esteemed editor, to tell them about ZMP - the Zmodem equipped PD comms proggy for our favourite machines. As I write this, I've just got my hands on a copy direct from the land of OZ (chorusses of neighbours resound all over the land), and first impressions are certainly impressive. So, any references I've made to us CPC users not having access to one of the best file transfer protocols around should henceforth be ignored, overlooked, binned, and likewise jettisoned. Humble pie eating exhibition over!

It's my intention to have an in-depth look at ZMP real soon now - keep your eyes peeled for the low down in your favourite mag!

OK, so, let's get down to it - file transfers.

In the beginning was ASCII transfer. What that meant (and still does) was that, as the host machine (the BBS, or your mate's 464) displayed the bits and bytes that made up a program, text file, or what have you, your machine busily captured what it saw, and saved it off to disc or tape. All well and good you might think, and, indeed, given absolutely perfect conditions, it's a fine way to move files around.

Trouble is, (there's always a catch) BT have never guaranteed that the various pops and whistles that plague our phone lines won't happen just in the middle of a vital file transfer. Now, if you're busily grabbing a text file, the odd letter or two (dozen) coming up wrongly at your end isn't the end of the world - even if you don't catch the mistake when you read through it, your spell checker will (you DO use a spell checker, don't you??)

Now, on the other hand, if you're sucking the latest PD masterpiece in DTP software down the line, and a byte gets garbled, it's most unlikely that said software will run, never mind make sense when it does. Strange to relate, it didn't take people long to discover this drawback, and a number of bright sparks decided to do something about it. Thus, dear reader, were file transfer protocols born.



Amongst the many that are available for the myriad machines that populate this planet, the CPC (usually under CP/M) has access to but a few, namely Kermit, (slow, but effective on 7 bit lines), Modem7, Xmodem CRC and checksum, Zmodem, (the preferred choice - it's incredibly fast), Xmodem 1K, (often erroneously referred to as Ymodem) and one or two others that aren't quite as popular. That totals (without the latter mentioned lot) six in all - plenty for most people!

Why so many? Well, like most things that exist in the computer world, improvements are constantly being made to file transfer protocols. In this respect, Xmodem evolved from Modem7, in its checksum format. A while later, the CRC variant appeared (CRC stands for cyclic redundancy check - don't worry about it, I might cover it in a later

article, if we ever get round to dissecting MNP). That evolved into 1K Xmodem, which was a bit faster, and more reliable than the basic checksum variant.

The final evolution was to Zmodem, a protocol which has seen some tremendous improvements in the PC world - which hopefully will filter down to us.

Kermit, on the other hand, is kermit is kermit, and, yes, it was named after that obsequious and pucrescent little frog that chases the pig on the box. It too undergoes development, but only rarely do the advances in its design ever reach the CP/M market. In itself, this isn't a problem, since every Kermit ever written will negotiate a mutually agreeable way of working with every other one - so you'll always be able to use it, even if the version on the service you're contacting is 10 years younger than the one you've got!

That's the history lesson out of the way - how do you use these gifts from the programming cognoscenti? In essence, it's a doddle. Your biggest decision is which one you want to use. In order of my personal preference, it goes Zmodem first, then Xmodem 1K, Xmodem CRC, and after that I couldn't care less! There will be times when Kermit is the only option - but they're becoming more and more rare - even Telecom Gold will let you use Xmodem now!

Having made that decision, all you do is let the service (or your mate with the 464) know which one you would like to use to trough its hard discs to the core. It takes care of its own end, and all you then have to do is make sure you hit the right keys at your end. Now, I don't intend to go through every comms package available on the CPC and give you chapter and verse on how to use it - there'd be no point in people writing manuals if I did. So, if you're not sure, RTFM, Mate! (read the fantastic manual!)

When you see one of them working as a file is sucked down the line, you will often see little messages appearing, some of which may be a bit on the dark side to you. All they are, are notes from the program to you to explain why the file that the BBS said was going to take ten minutes has already taken twelve. They're usually a sign that sundry bits of bacon and egg are being fried on your phone line. BUT, the protocol will know about it, and will be sending little messages to the other end to tell it that its got its knickers in a twist, and needs a bit of help. All it's saying is 'What? I didn't hear that properly, tell me again!!', and the other end, like a dutiful child, does exactly that.

There will be times, though, when the eggs and bacon are so bad that neither end can sort it all out, in which case, after so many tries, one or other gives up - nature's way of telling you to save your dosh and try again another time. There's no way round this, I'm afraid, although, very often, if you have another go straight away, you'll get a different (sometimes means better) line, and everything will go smoothly.

And that's about the size of it, really. Like everything else in comms, file transfers, and the protocols, are basically very simple to use, and you don't need to understand every little detail about them to use them. After all, you don't need a degree in mechanical engineering to be able to drive the car, do you?

So, until we meet again in these hallowed pages (roughly a calendar month from now, God and BT willing), get those modems dialling. Tara!

Digitiser, the Revenge

A follow up on Digitising by Master Nick Hutton.



Hopefully those of you who typed in the Digitiser listing in the May edition of ACU will now have fully debugged, working copies secreted amongst your Disk collection. You should now be familiar with the listing's operation and eager to utilise it's output in your own programs. In it's current form it is not the easiest little subroutine to add to your programming masterpiece. The first step to using the program in your own listing is to get it into a neat and more memory efficient form, a Binary file, (gasp of horror).

To accomplish this mind blowingly difficult operation you must first have a completely bug free, fumigated program, á la ACU May.

Run the Digitiser program as it appears in the magazine, we now need to get into BASIC by pressing ESCAPE twice, not by selecting option five on the Menu, dummy. Next, just enter the following short lines of BASIC, making sure you have a Disc with a couple of K free in the built in pop up toaster.

(That reads Disc Drive for those with a limited sense of humour).

```
SAVE "DIGICODE.BIN",B,&A000,&208
```

Finished already? You should now have a Binary file on Disc of approximately 1K in length, if not, consult your Bank Manager or Local M.P. The program is now in a much more portable form.

To incorporate it in your latest moneyspinner just add the following lines at the start of your program which form a short loader.

```
10 H=HIMEM
20 IF H=36863 THEN 60 ELSE 30
30 MEMORY &9FFF
40 LOAD "DIGICODE.BIN",&A000
50 CALL &A000
60 MEMORY "Start address minus 1"
70 LOAD"SOUND.BIN", start address, length
80 REM Start of your Program
```

The loader incorporates a short routine which makes sure that the Digitiser is not loaded-in more than once, which means that every time you alter your program and then run it, you won't have to wait for the Binary file to load again. (We don't neglect Tape users here at ACU).

Line 70 will load in the sample you have recorded previously with the Digitiser. You should amend the details of this line, eg: file name, start address and length, to suit your own sample, which should be saved on Disk or Tape. You must also change line 60 to reserve the correct amount of memory for your sample. For example if my sample started at &2000 the statement in line 609 should read: MEMORY &1FFF (We can't all count in Hexidecimal).

With patience, and more than a bit of luck, both the Digitiser code and your sample should be safely in the computer's memory and ready for playing. To play a sample you must enter the RSX instructions into the desired lines of your program, no more friendly menu I'm afraid.

Playing a sample is really very simple if you can remember the start and end addresses. The following line will play your sample.

:PSOUND, START ADDRESS, END ADDRESS, VOLUME

Once again please amend the line to suit your sample's details. It is of course possible to record sound from within your program in a similar manner using the RSX :RECORD.

As soon as the RSX has been issued with the correct parameters, and your sample has been played, command will be returned to your own basic program and the next instruction will be carried out.

At this point I feel that I must remind you that you shouldn't sample a sound from say, a music cassette, without first seeking permission of the copyright holders for that piece of music. (I won't tell if you won't).

I expect that many of you are wondering why your samples are not as clear as those on say, Chase HQ or Shinobi. Well, the secret to a clear sample is all in the speed of data sampling and bits per second. The trick is to cram as many sampled bits as possible into each piece of analogue sound. The more pieces of sound the computer takes in the smoother the sample.

Your samples sound rather harsh because the computer does not take in every single piece of data on your audio tape, it only remembers an evenly spread section of sound, hence the somewhat crackly nature of playback.

So what we need is to find some way of squeezing more data into each sound the computer reads. After some careful thought I deduced that there was a way of increasing the perceived sampling rate and so clarifying the digitised sound.

Before I continue, I should explain that the following procedure for digitising sound will only work on First Bytes Digitiser as the listing in the May issue of ACU doesn't have all the required functions. (Whaddya expect for 1K of code?)

Firstly, we must slow the analogue sound down to half speed, your cassette recorder may have a half speed setting. Make sure your sound is at half speed before sampling it in. Then set the recording speed option to normal speed, and record your sample. Next, once your sample is in memory, select the playback speed setting and set it to twice normal speed. When your sound is played back it should be much clearer. This is because it contains twice as much digital data as the original sample and is therefore twice as clear, theoretically. (The diagrams should help explain the mechanics of the operation)

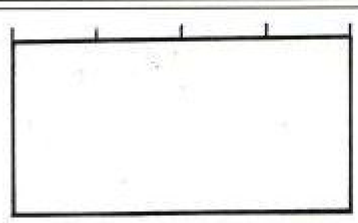
It is also theoretically possible to keep on slowing down the speed of the analogue data "ad infinitum" but a "half speed ratio" should be quite sufficient for your purposes.

And on that last note I conclude my little expedition into the outwardly baffling subject of digitising.

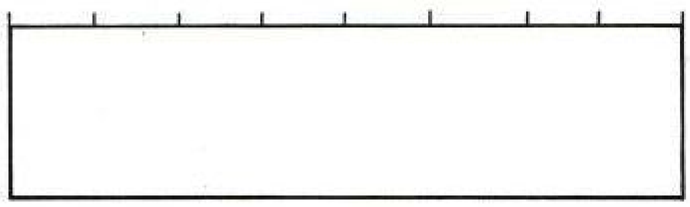
Cramming in the data

Each red dot represents a sampled bit of data. The length of each rectangle is proportional to the length of analogue tape that the sound would take up and therefore the overall amount of time it takes for the sample to play.

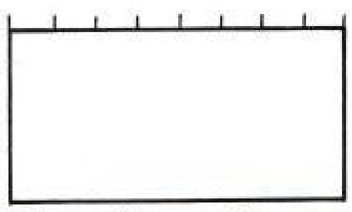
Closer examination of the process reveals that it is possible to cram in twice the sampled data or bits, into a sample of the same perceived length as a sound of normal speed. This means that the sample uses twice as much memory as a normal one, the only drawback.



Normal speed. I second 4 samples



Half speed 2 seconds 9 samples



Played at twice recorded speed I second 9 samples

FORMAT

BY G. FARMER

Just as a little extra after Master Hutton's follow-up, here's a handy disc formatter for those of you who are bored with Disckit 3. Save the program and when you want to format a disc, run the program, insert the disc to be formatted and select from the menu

```
10 SYMBOL AFTER 256:MEMORY &5FFF
20 FOR A=&7000 TO &7081
30 READ B$:POKE A,VAL("&"+B$):C=C+VAL("&"+B$)
40 NEXT
50 IF C<>13682 THEN PRINT"DATA ERROR":END
60 CALL &7000
70 DATA 01,0A,70,21,17,70,CD,D1,BC
80 DATA C9,0F,70,C3,1B,70,46,41,52
90 DATA 43,41,4C,CC,00,00,00,00,00,DD,7E
100 DATA 0A,32,7F,70,DD,7E,0B,32,80
110 DATA 70,DD,7E,08,32,81,70,DD,6E
120 DATA 00,DD,66,01,7E,DD,6E,02,DD
130 DATA 66,03,4E,23,46,DD,6E,04,DD
140 DATA 66,05,5E,23,56,D5,DD,6E,06
150 DATA DD,66,07,5E,23,56,62,6B,D1
160 DATA DD,E5,DF,7F,70,DD,E1,E5,DD
170 DATA 6E,00,DD,66,01,77,DD,6E,02
180 DATA DD,66,03,71,23,70,DD,6E,04
190 DATA DD,66,05,73,23,72,D1,DD,6E
200 DATA 06,DD,66,07,73,23,72,C9,00
210 DATA 00,00
220 MODE 1:BORDER 0:INK 0,0:INK 1,26:GRAPHICS PEN 1
230 ENV 1,=11,10,=9,3000
240 DEFINT a-z
250 ORIGIN 0,200
260 FOR r=100 TO 380 STEP 7
270 MOVE r-7,r/4:DRAW r-3,r/8:DRAW r,0:DRAW r-3,-r/8:DRAW r-7,-r/4
280 NEXT
290 DRAW 93,-25:MOVE 93,25:DRAW 374,96
300 LOCATE 5,11:PRINT"0":LOCATE 24,6:PRINT"39":LOCATE 10,9:PRINT"10":LOCATE 15,8
:PRINT"20":LOCATE 20,7:PRINT"30":LOCATE 1,1:PRINT"Se
lect option":PRINT"1.Data Format":PRINT"2.System Format":PRINT"3.Exit"
310 i=VAL(INKEY$):IF i<1 OR i>3 THEN 310
320 SOUND 1,200,100,10,1
330 IF i=1 THEN f=&C1
340 IF i=2 THEN f=&41
350 IF i=3 THEN |BASIC
360 LOCATE 11,23:PRINT"Press F  to Format":LOCATE 9,24:PRINT"Any other key to ab
ort"
370 i$=UPPER$(INKEY$):IF i$="" THEN 370
380 IF i$<>"F" THEN 220
390 SOUND 1,150,100,10,1:LOCATE 11,22:PRINT SPACE$(70)
400 GRAPHICS PEN 3
410 HL=0:DE=0:BC=0:A=0
420 POKE &6FFF,&83:HL=&6FFF
430 |FARCALL,&BCD4,0,@HL,@DE,@BC,@A
440 A=f:DE=&0:|FARCALL,HL,7,@HL,@DE,@BC,@A
450 POKE &6FFF,&86:HL=&6FFF
460 |FARCALL,&BCD4,0,@HL,@DE,@BC,@A
470 HLT=HL
480 ADR=&6000
490 TRACK=0
500 FOR P=0 TO 9
510 POKE ADR,TRACK:POKE ADR+1,0:POKE ADR+2,f+P:POKE ADR+3,2:ADR=ADR+4
520 NEXT
530 DE=256*TRACK:HL=&6000:|FARCALL,HLT,7,@HL,@DE,@BC,@A
540 r=100+7*track:MOVE r-7,r/4:DRAW r-3,r/8:DRAW r,0:DRAW r-3,-r/8:DRAW r-7,-r/4
550 TRACK=TRACK+1:IF TRACK<40 THEN ADR=&6000:GOTO 500
560 SOUND 1,30,50,10,1:SOUND 1,30,100,10,1:LOCATE 12,22:PRINT"Format complete":L
OCATE 13,23:PRINT"Press any key":WHILE INKEY$="":WEN
D:GOTO 220
```

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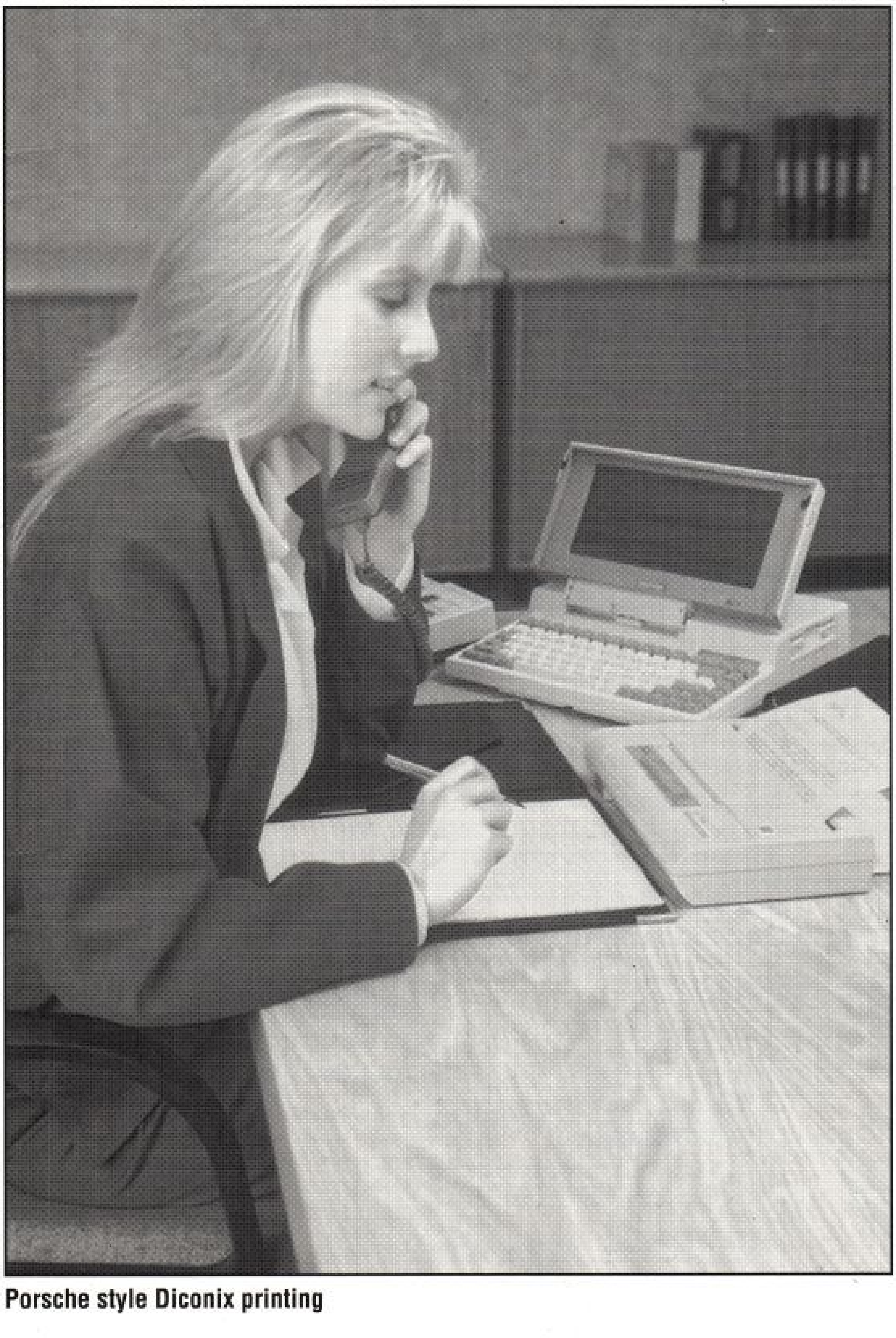
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CARRYING POWER

Portable printers at affordable prices - just what the doctor ordered

Whatever people might say about printers, love them or hate them, one thing for certain is that you can't ignore them. Big, bulky, noisy and with more flashing lights than a Xmas tree, they certainly do stand out from a distance. In the past, it might have been alright to accept the conditions printers oppose on you, but today with the growth of portable light weight printers, there is now an option to have something that blends into your CPC rather than attaches itself, like a creature out of Alien. The choice of lightweight portable printers is still limited, out of the hundreds of printers manufactured by various companies, there are only 4 printers currently available in the UK which offer a real lightweight option. In order to be classified as a portable printer, we looked at several facilities. Firstly was the printer light weight, could it be run on batteries and could it stand on top of the monitor without falling off! From Hi-Fi come Computer manufacturer Toshiba, currently on offer is the ExpressWriter 301, business computing firm Hewlett – Packard, renowned for its laser printers offers the ThinkJet, photographic suppliers Kodak through a subsidiary have the Diconix 150 Plus and British based Applied Systems Developments have got hold of a Japanese produced printer which is badged with their name and called the Personal 80.



Porsche style Diconix printing

Unlike conventional printers, the portable ones have several quirk features. Some of them use thermal paper, others fax paper, which means that if you try using some of the best conqueror 100 gm paper you have, not all the letters will appear on the sheet of paper. Some use ink jet technology which makes printing very quiet. The overall quality of the portable printers is not as good as a conventional option, but for their size and flexibility, choosing a portable printer makes an interesting option and alternative choice.

Also, it should be pointed out that as mentioned previously, a portable lightweight printer is a new concept. Despite its youth, these portable printers are trying as hard as they can to be in the running against the big printer boys.

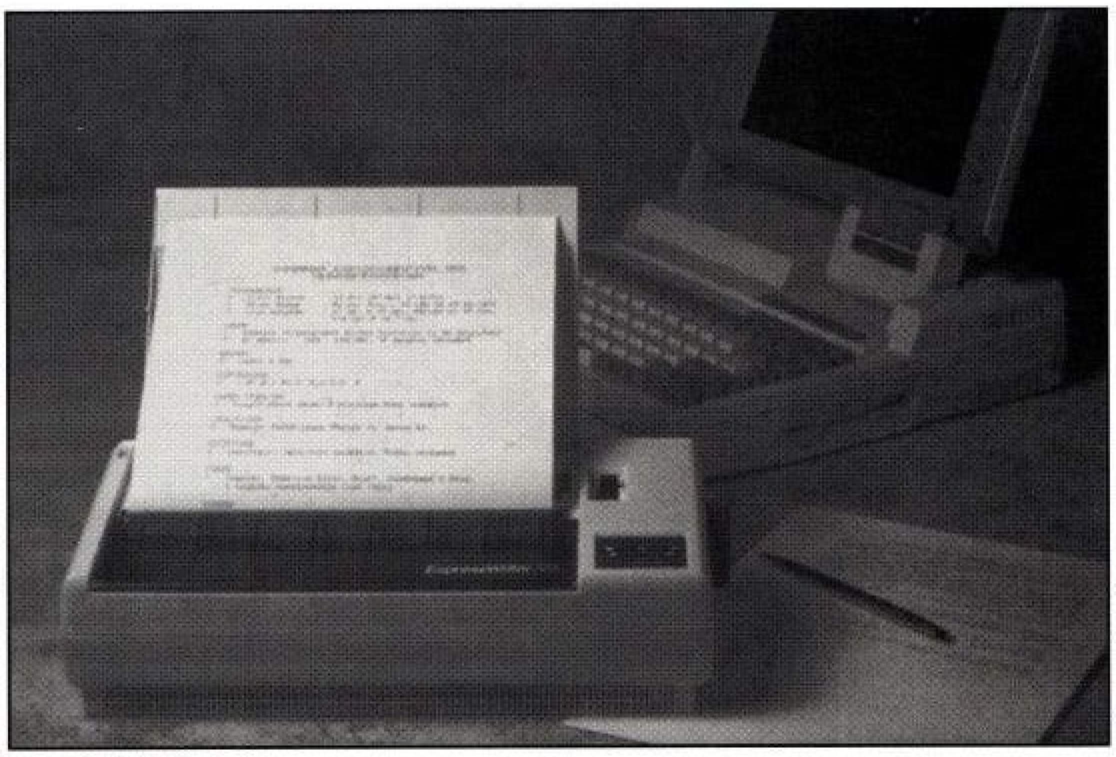
First off, is the ExpressWriter 301 from Toshiba. Owing to their background in making things small, from televisions and radios through to its successful portable computers, Toshiba has tried to pack a lot into the ExpressWriter 301. First glance at the machine sees a good looking, stylish piece of hardware. The printer is called a 24 element, thermal transfer, non impact printer which means it produces a 24 pin dot print out on thermal paper. When using the supplied paper, the results are very good but when using other paper , especially very high quality, some letters in text do not transfer onto the paper. There are two print speeds, high speed offers 60 cps while normal mode offers 42 cps. Plus there are a choice of three print fonts, courier, prestige elite and draft. The ExpressWriter 301 is really ideally suited to printing single sheets rather than printing off 2500- non-stop lines of your latest program.

Using the printer is easy and there is even a control on the side called density which allows you to make printed text either lighter or darker depending on what you like. Overall the ExpressWriter 301 is a great little printer, but in the long run it can get expensive

to run owing to its use of special paper.

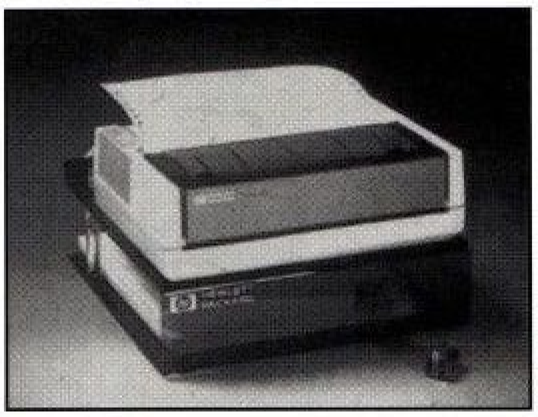
From Hewlett-Packard is the ThinkJet. Not only is this the heaviest of printers weighing about eight pounds, but is also the oldest model. Apparently released in November 1984, this printer works by using ink jet printing. The ThinkJet offers four print pitches, normal, expanded, compressed and expanded-compressed and at its fastest speed can offer 150 cps. As well as being able to use single sheet paper, you can also use it for continuous printing. Noise level is quite low and the results of printing are very good. There are no major problems with the ThinkJet apart from its size, but it is a very reliable and rugged printer.

If there was a direct comparison, the Diconix 150Plus would be the printer equivalent of the Ray Ban, Levis 501 or Porshe 911. It is a cool and classic printer. Slick looking, stylish design and just generally all round brilliant, the 150Plus represents sheer excellence. Weighing in at 3.1 pounds, the 150Plus packs in a number of features. It offers four print fonts, draft, NLQ, Quality and condensed and is able to print out at some very high speeds. Draft offers 180 cps, NLQ 52 cps, quality 36 cps and condensed 235 cps. In use the 150Plus was very quiet and easy to use. All controls are accessed on the top of the printer and are easy to use and control. The printer is able to accept both single sheets and also continuous paper making the printer ideal for many purposes. Once again, it uses inkjet which offers a high quality print out and means there is no need to use special paper to get great results.



Stylish Toshiba

Finally, from Applied Systems Developments is the Personal 80. It really offers only one print speed, that of 80 cps and also one print font. At first this seems like the best option around, it is very lightweight, but unfortunately, quality is anything from excellent. This is largely due to the printer being thermal and only able to use fax machine roll paper, anything else will not work.



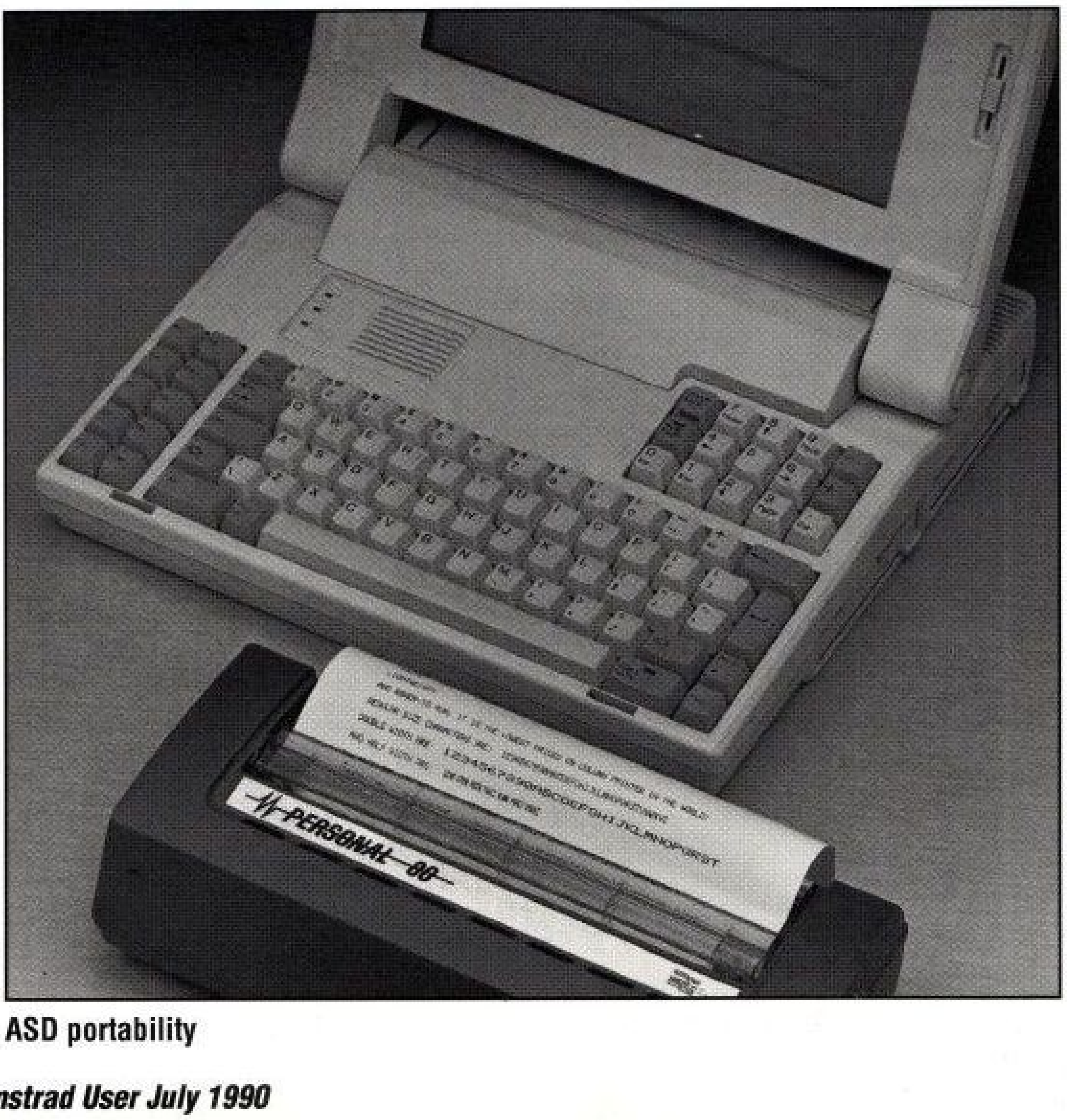
HP Jetpower

Loading the paper into the Personal 80 is an exercise in itself, despite the instructions supplied, it is a rather cumbersome thing to do. Eventually the paper gets loaded albeit a little worn at the edges. As a printer for basic printing of things which do not require a good print out the Personal 80 is alright to use, but if you need to use it for producing letters, then the Personal 80 is not a very good option to choose from.

Overall, if I had to pick out one printer, it would be the Diconix 150Plus, as it is the best of the bunch and in terms of quality is even better than some conventional printers around.

Leslie Bunder

Toshiba Expres-swriter 301	£345
Hewlett-Packard ThinkJet	£399
Diconix 150Plus	£399
ASD Personal 80	£150



ASD portability

Prosaic Settings

A little bit of history in the making outside ancient Malmesbury.



Major 'Wild' Bill Stealey with pride and joy "Miss Microprose"

Just off the M4 motorway on the way to Bristol lies the most ancient borough in England, the delightful and historic Malmesbury. Keep going for a few more miles further into the countryside and you come across the peaceful little village of Tetbury, with its Olde Worlde market place and quaint country pubs.

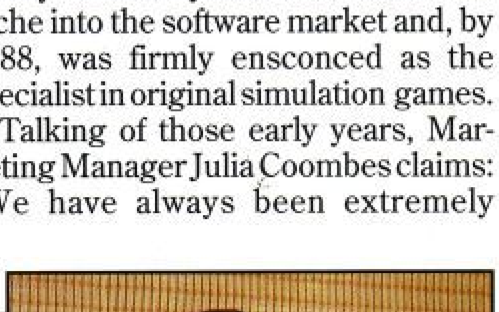
Now, Americans are not normally renowned for their sense of history, but here we are, playing games and tapping away in London, while down there amidst the Buttercups and the Daisies, American Major 'Wild' Bill Stealey has set up the British arm of his MicroProse software empire and, given the choice, I know where I would rather be.

Back in Baltimore, in the good old US of A, MicroProse burst into life in 1982, and it wasn't long before titles such as Hellcat Ace and F15 Strike Eagle took the company straight into the software charts and the hearts of lovers of simulation.

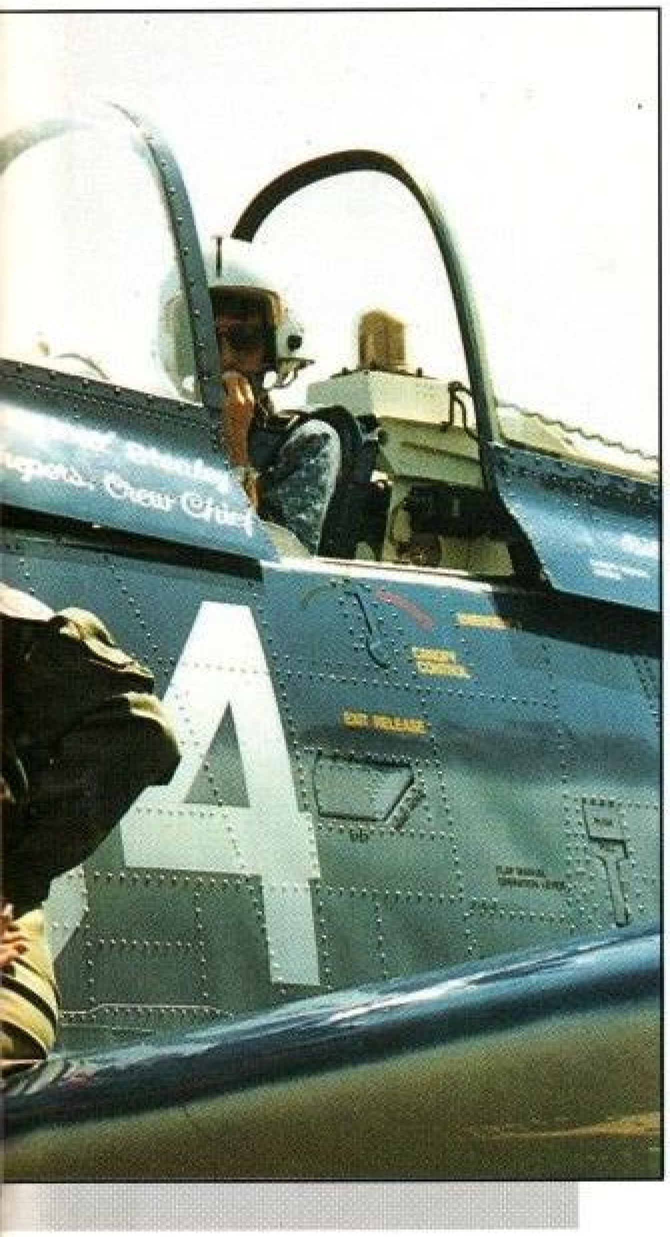
Flying on the wings of these successes, MicroProse touched down in England in 1986 and, quite literally, put Tetbury on the map after the huge success of F15, the first release on this side of the Atlantic.

By immediately following up this success with further epics like Gunship and Secret Service, MicroProse slowly but surely carved a whole new niche into the software market and, by 1988, was firmly ensconced as the specialist in original simulation games.

Talking of those early years, Marketing Manager Julia Coombes claims: "We have always been extremely



British MD Adrian Parr



selective about what we release on our labels. Every game must be a potential industry classic capable of surviving in the market for a number of years. They must also live up to our customers' expectations."

Judging by the number of orders for instantly recognisable names such as F15, Secret Service and Pirates!, that flood into MicroProse's enormous 20,000 sq ft warehouse every day, it must surely be safe to say that these games have indeed survived.

Having established themselves in the simulation market, the boffins at MicroProse set about the task of finding more gaps in the market for their own brand of depth of play and attention to detail.

As Julia herself puts it: "We turned our attention to the mainstream market, which was not being served by our realistic simulations. In this area, short shelf-life products seemed to proliferate and for a large group of home users, there was no suitable entertainment software available."

The result was the launch of MicroStyle in early 1989 which has brought us classic action games like RVF Honda and Stunt Car Racer as the first of their UK based operations.

If you want to get on in the software market, standing still is certainly not something you want to be contemplating for any length of time, it is also something MicroProse could never be accused of.

In May of the same year, one of the biggest industry shocks must have been MicroProse's takeover of the entire range of software produced by Telecomsoft, the entertainment software division of British Telecom.

Overnight, MicroProse Europe doubled in size, taking on the renowned Firebird and Rainbird titles.

"Our policy", claims Julia, "has always been to take a premium product and give it a strong identity. Through our four labels, MicroProse, MicroStyle, Rainbird and Firebird, we are able to address four distinct sectors of the market and successfully position a very varied range of software."

Ne'er a truer word said. MicroProse continues to produce classic simulations, with Railroad Tycoon, an incredibly detailed history of the early years of rail pioneering in America, Britain and Europe, set out as the next epic to hit the streets. Rainbird has taken over from the short-lived MicroStatus label to take care of the strategy market with MicroStyle catering for the more action orientated games and Firebird looking after the younger gamesters.

At a glance, it would appear as if MicroProse had the games market well and truly stitched up but, where to now? With all advertising, promotion, packaging and PR handled in-house from their rural headquarters, is there any scope for advancement?

The setting up of an in-house programming team at the end of last year has certainly enabled the company to cater for the diverse demands of European customers by converting software to desired formats, and MicroProse's latest venture looks all set to take the Coin-op market by storm.

F15, the arcade game, was officially launched at the ACME show in America in March and looks set for a summer showing in the UK.

Julia Coombes said of the development: "The original concept was devised about two years ago. Basically, it will allow us in the future to license our own games without the usual hassle and much more cost-effectively. The technology we have used in the design is so far advanced compared to anything else in the arcades, it should certainly stand out."

In this continuing quest to stand out in the crowd, MicroProse are concentrating on quality games for the future. As the strategy and simulation games get bigger and more complex, the main problem for CPC owners is that they are just too big for the limited memory of the machine. This may well result in a subtle move away from 8-bit machines by the company but, never fear, with Firebird still around, there are more than enough plans to keep us happy. With the forthcoming release of Oriental Games and Rick Dangerous II to look forward to on the CPC as classic examples, Tetbury could fast become a place of pilgrimage for other than historic reasons.



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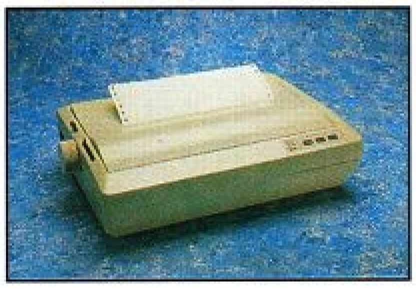

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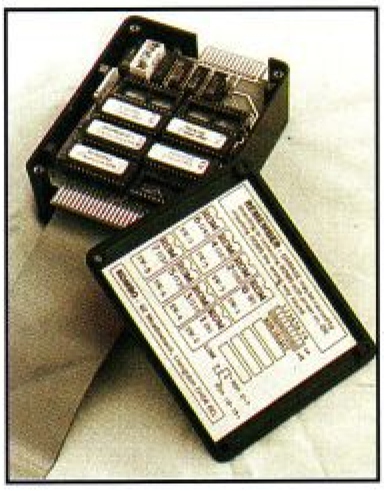
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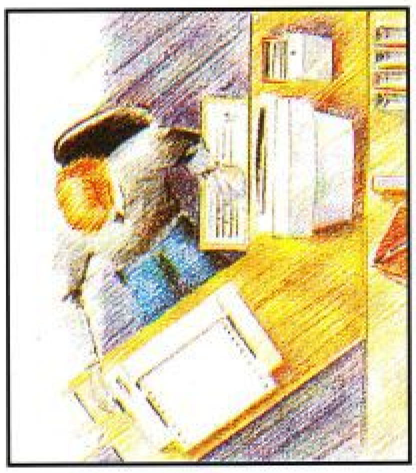
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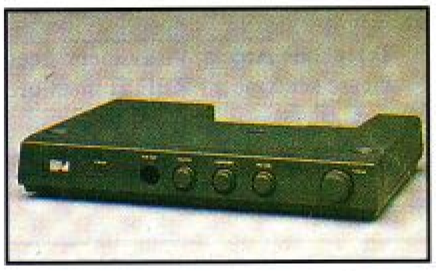
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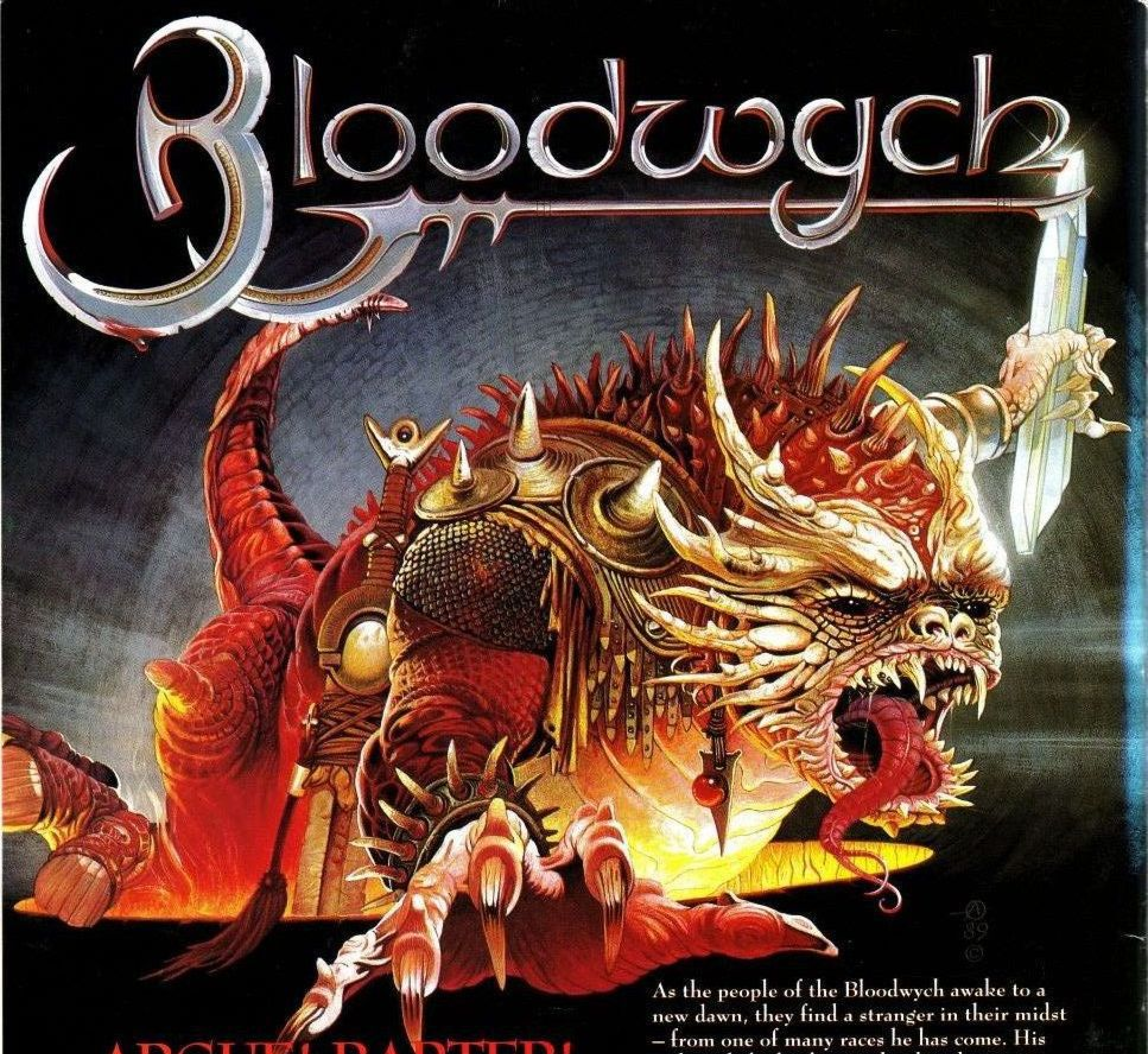
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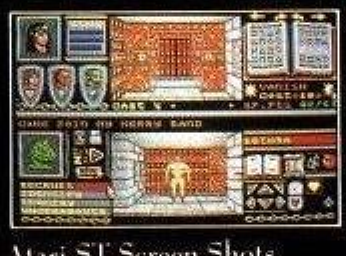
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